EMPLOYMENT AND POPULATION ANALYSIS AND PROJECTIONS PROVO METROPOLITAN AREA, UTAH AND THE UNITED STATES

Economic Section of

The Provo Area Transportation Study

Prepared by

LAWRENCE NABERS
Professor, Department of Economics

JEWELL J. RASMUSSEN
Professor, Department of Economics

Prepared for

The Utah State Highway Department
and
Local Government Agencies

In Cooperation With

The U.S. Bureau of Public Roads

The Bureau of Economic and Business Research
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INTRODUCTORY NOTE

This is the third and final report analyzing and projecting the employment profile and estimating the future population of Utah's three Metropolitan Areas--Salt Lake, Ogden, and Provo--as part of a transportation study of each area by the Utah State Highway Department and local government agencies in cooperation with the U. S. Bureau of Public Roads. The two previous studies of the series are: Lawrence Nabers and Jewell J. Rasmussen, Employment and Population Analysis and Projections Salt Lake City Metropolitan Area, Utah and United States (Bureau of Economic and Business Research, University of Utah, September 1962), and Lawrence Nabers and Jewell J. Rasmussen, Employment and Population Analysis and Projections Ogden Metropolitan Area, Utah and United States (Bureau of Economic and Business Research, University of Utah, July 1963).

When the Salt Lake Metropolitan Area study was undertaken, reports for the United States were still being made in accordance with the employment classification procedures of 1942 and 1945. Although data were available for the State of Utah and the Salt Lake Metropolitan Area in accordance with the Standard Industrial Classification Manual as revised in 1957, the unavailability of the U.S. data under this classification made necessary the decision to use the old classification.

When the Ogden Metropolitan Area study was begun, the U.S. data were available in accordance with the 1957 revision of the manual. However, inasmuch as the Ogden Metropolitan Area is contiguous to the Salt Lake Metropolitan Area, and thus closely interrelated in many ways with the latter, it was deemed desirable to use, as far as possible, the same techniques, classifications, time periods, etc.

in order to achieve as much comparability as possible between the two areas. There was also a considerable saving of time and money in using the old classification for the Ogden Metropolitan Area by not having to redo the analysis of the State of Utah and the United States.

The foregoing considerations no longer held for the Provo Metropolitan Area study. The U. S. Bureau of Labor Statistics Bulletin No. 1312, Employment and Earnings Statistics for the United States, 1909-1960, provides completely revised data, with new and better benchmarks, in accordance with the 1957 Standard Industrial Classification Manual; and the lack of employment diversification in the Provo Metropolitan Area, reflecting the much smaller labor market, does not permit the degree of refinement used in the two previous studies. Hence the nine standard classifications used by the Department of Employment Security were modified only to include a category of Defense.

All analyses for the State of Utah and the United States, as well as the Provo Metropolitan Area, were made in terms of the revised data for classification of 10 categories rather than the 13 categories used in the Salt Lake and Ogden studies. Hence, although the Provo study is similar, it is not comparable to the other two studies in many respects.

SECTION I

INTRODUCTION

Definition of Project

The primary purpose of this study is to project the employment profile and to estimate the population of the Provo Metropolitan Area for the years 1965, 1970, 1975, and 1980. The study is one phase of the Provo Metropolitan Transportation Study and is intended to provide basic information about the present economic structure and future economic patterns essential to the projection of traffic generation and possible traffic patterns in the Provo Metropolitan Area.

The area includes all of Utah County. Strictly speaking, perhaps the isolated small communities of Cedar Fort and Fairfield on the far west side of the county and Soldier Summit and Thistle on the extreme east side should not be included. However, the small total population of these communities (about 650) makes it impractical to separate them from the county totals. Furthermore, the U. S. Bureau of the Census defines the standard metropolitan statistical area of Provo-Orem as all of Utah County.

The study includes the data, analysis, and projections for Utah and the United States as well as for the Provo Metropolitan Area. The State and the Nation were included in the study for two reasons: (1) There is much economic interdependence between the Provo Metropolitan Area and the State of Utah and

between Utah and the Nation. For example, all the defense activity in Utah is located outside the Provo Metropolitan Area and yet the Area will be affected by changes in defense programs in the State. National defense policies likewise will have important effects on Utah. (2) Patterns, trends, and relationships in the smaller regions can be checked against and compared with those in the larger political units. Thus, deviations in patterns and growth rates can be noted readily and analyzed meaningfully.

Time Period for Determining the Economic Profile

The time period selected for the study of existing patterns, trends, and relationships in economic activities was that of 1952 to 1962, inclusive. This period was selected for several reasons. (1) It seemed to be the only period for which comparable data of the type required in this study were available for all three levels of government on a consecutive annual basis. (2) Census data, if collected for a sufficient number of observations to have any significance, include periods in which there have been major historical changes and therefore are of doubtful value as guides to future development in the detail required in the present study. (3) The period 1952 to 1962 is far enough away timewise from World War II to be free from most of the war and immediate postwar changes, and it appears to represent a fairly consistent pattern of development which the writers feel will tend to prevail, with some modifications, in the future. The latter statement is a judgment, of course, which the writers will attempt to justify in the study.

All projections of employment and estimates of population are made by five-year intervals--except the first period--1965-1970, 1975, and 1980. A five-year interval is convenient and provides adequate checkpoints to correct trends that do not seem reasonable nor supportable.

Resume of Study Procedures

For all three levels of government--i.e., Provo Metropolitan Area, Utah, and the United States--the study followed three essential steps:

1. The collection, classification, and analysis of historical employment data for the period 1952-1962.

2. The determination of the growth rates and patterns for all industrial classifications and then the making of employment projections to 1980 on the basis of such trends and other relevant information.

3. The estimation of population to 1980 based on the relationship of total civilian labor force to civilian population.

The beginning point in the first step was the collection of the basic data for the three levels of government for the years 1952 to 1962. The employment data were gathered from reports and records of the Utah Department of Employment Security and publications of the Bureau of Labor Statistics, U. S. Department of Labor. The data were classified in accordance with the Standard Industrial Classification Manual as revised in 1957. After the data were adjusted for comparability, they were rearranged in 10 industrial groups having suitable characteristics pertinent to the Provo Metropolitan Area for

analysis and determination of trends. The employees in these ten categories, which are discussed in the following section, are designated in this report as "classified workers."

After thorough analysis of the patterns and trends of employment during the 1952-1962 period, the most critical phase of the study was the selection of growth rates and patterns as a basis for the realistic projection of employment to 1965, 1970, 1975, and 1980. The most important single factor was the actual growth rate exhibited by each major category during the period of 1952 to 1962. Such modifications in the growth rates were made as seemed reasonable in the light of other known factors. Where the pattern of development in the 1952-1962 period seemed inappropriate as a basis for employment projections, such as in defense activities, rather arbitrary changes had to be made.

Total employment of all classified workers does not equal the total civilian labor force; such categories as the self employed, private household workers, and unemployed are not included in the 10 major groups of classified workers. For the want of something more positive, it was assumed that a constant relationship would hold between these groups and total classified workers. Hence the latter total was raised by a constant percentage to obtain the total civilian labor force for each of the three governmental units being studied.

The final step in the study was the estimation of population for the four selected years--1965, 1970, 1975, and 1980. The basic theoretical assumption with respect to estimated population is that population size within a given region is a function of the demand for labor within that region. That is, the number of

workers within a region will be determined by the profitability of business enterprise, including agriculture, and the level of government activities. Thus, given the number of workers that the region can sustain and given the ratio between workers and population, it is possible to determine the total population of the region.

It should be emphasized that this approach ignores short-run cyclical fluctuations which occur every two to five years and is applicable only to a work force-population situation in which prevailing trends are of sufficient duration that the growth factors inherent in a region's economy can work themselves out. The justification for not considering short-run fluctuations is that on a regional or local level the causes underlying such fluctuations may be at least provisionally treated as different from the causes underlying growth trends. No such assumption may be made, even provisionally, for larger-than-regional areas.

Industry Classification

The decision to use the three government levels, Provo Metropolitan Area, the State of Utah, and the United States, for comparison purposes required that the data be organized in such manner that the components of each of the industrial classifications were strictly comparable. For this purpose employment data were gathered from the Department of Employment Security using the following publications: Utah Labor Market Quarterly, published by the Utah Department of Employment Security, and Employment and Earnings:

Annual Supplement Issue, U. S. Department of Labor, Bureau of Labor Statistics. It should be noted that all data for other than insured employees are estimates or are based on interview sampling.

In the preceding studies of this series, which projected the population of the Ogden and Salt Lake Metropolitan areas, it was necessary to use the Standard Industrial Classification Manual, 1945 edition, because of the unavailability of employment statistics for the United States under the revised edition. Furthermore, it was felt that the larger and more diversified industrial base permitted a more detailed breakdown of major industry classification than the nine used by the Department of Employment Security.

The foregoing considerations no longer hold in the present study. The data are now available for the United States following the 1957 S.I.C. revision; and the lack of employment diversification reflecting the much smaller labor market does not permit the degree of refinement used in previous studies. The major industry classification used in the present study is as follows:

I. Agriculture
II. Mining and Mineral Industries
III. Manufacturing
IV. Defense
V. Government
VI. Construction
VII. Transportation, Communication, and Utilities
VIII. Wholesale and Retail Trade
IX. Finance, Insurance, and Real Estate
X. Services

The logic underlying the above classifications is discussed in detail in the 1957 revision of the S.I.C. manual. Only one comment need be made with respect to the use of this classification.

In addition to the customary inclusions by the Department of Employment Security, the category, Defense, was defined to include the civilian employees of the armed forces as well as one-half of the employees in the sub-category, Electronic Components and Assessories. The latter inclusion is consistent with the experience on the state and local level but can be justified on the national level only by observation that it is more accurate to include some portion in defense rather than none. As a result of including all civilian employees of the Defense Department under Defense, the category, Government, includes only nondefense employees.

Sources of Data and Estimating and Adjustment Procedures

For the United States, the new code non-agricultural figures were obtained from the Bureau of Labor Statistics Bulletin No. 1312, Employment and Earnings Statistics for the United States, 1909-60. For the years 1961 and 1962, the February issue of Employment and Earnings, 1962 and 1963, were used as sources. It was unnecessary to make any estimates or adjustments on the national level. Labor force, self-employed, agriculture, and other statistics not found in the foregoing were taken from The Economic Report of the President for the relevant years.

For the State of Utah, non-agricultural employment figures for the years 1952 through 1957 were taken from the Utah State Department of Employment Security as revised in keeping with the new code. Where the desired two-digit breakdown was unavailable, figures were obtained from the Labor Market Quarterly worksheets and other sources at the Employment Security office. For the

years 1958-1962, figures were taken entirely from the Labor Market Quarterly worksheets. No estimates were necessary on the state level. Labor force, self-employed, agriculture, and other statistics not available in the foregoing were taken from a compilation prepared by the Department of Employment Security entitled, "Civilian Labor Force and Components."

For the Provo Metropolitan Area, the source for the 1958-1962 figures was the Labor Market Quarterly worksheets at the Employment Security office. For 1952 through 1957 that office had issued a set of revised figures on a county level by major industry classification only. The detail was obtained from the Labor Market Quarterly worksheets plus the separate listings of non-insured firms. These were both listed according to the old code. In comparing the major industry totals thus obtained with the revised figures, it was noted that only a few industries in Utah County were significantly affected by the code revision. Those industries which were significantly changed were adjusted to the new code by noting the two-digit changes which were developed for the Salt Lake Metropolitan Area Study and applying these changes to the Provo figures.

The significant adjustments are as follows:

1. Manufacturing. One of the most significant changes was the reclassification of some food processors (bakeries, dairies). Formerly they were classified as Retail Trade - Food. On the reclassification, they appear under Manufacturing - Food and Kindred Products. This accounted for almost all the differences in the Manufacturing and Wholesale and Retail Trade industries.

2. Construction. Following the pattern obtained for the State of Utah reclassification, all additions to the construction industry were placed in Building Construction - General Contractors.

3. Wholesale and Retail Trade. In addition to the above mentioned adjustment made in Retail Trade - Food, it was necessary to estimate Retail Trade - Furniture, Home Furnishings, Equipment, and Miscellaneous Retail Stores. On the old code these were combined into one category, Retail Trade Not Elsewhere Classified.

4. Services. Most of the problem of estimating in the service industry arose because for most of the early years, the non-insured industries were lumped into one figure. The estimating was done as follows: Educational Services was approximately 50.4 per cent of the total services from 1955 to 1962. Given the total service figure, the Educational Services was estimated using this factor for the years 1952, 1953, and 1954. For all other years, a figure for Educational Services was given and therefore could be subtracted from the non-insured figure. The remainder was distributed between Non-Profit Membership Organizations, and Medical and Other Health Services, using approximately the same proportions as given in the later years.

Agriculture, unemployment, labor force, etc., were taken from a compilation prepared by the Department of Employment Security entitled, "Work Force and Components."

Limitations of Data

One limitation of the study is the reliance solely on employment data. The movements in employment data do not properly reveal changes in methods of production or changes in the characteristics of the products. In a rapidly altering economy, these changes could only be revealed by an analysis of the comparable value data. The decision not to use value data in addition to employment data was based on two factors: (1) adequate value data are only available for census years or for years covered by the census of manufacturing; and (2) the time and finance limitations on the study. The latter considerations were important because the analysis of the value data is even more difficult and time consuming than the employment data. Nor is it as accurate as the employment data.

Further difficulties are inherent in the decision to confine the base period to the eleven years, 1952-1962. The period is all too short for revealing certain types of trends which may move in longer cycles. In addition, during this period, two major events occurred which had the effect of somewhat distorting the regularity of the observations: (1) the post-Korean adjustment which lasted approximately through 1954; and (2) the 1957 recession which showed up in a marked fashion on all of the series being utilized in the study. An alternative might have been to have worked with the decennial census and census of manufacturing data. This alternative was rejected, however, because it would have been necessary to go back too far in time to accumulate an adequate number of observations.

The philosophy which underlies the analysis contained here is simply that the data are taken as evidence which must be weighed qualitatively to justify the conclusions reached. No more is intended than that, in the best judgment of the authors of this study, the conclusions appear to be warranted by the evidence in the form of economic data adduced. It is not implied that the data used in this study have statistical significance in the technical sense that specific values can be given to inferences drawn from an analysis of the data.

There is a difficulty inherent in the study of any small region. One exogenous factor (exogenous in the sense that it cannot be predicted or anticipated by the analysis of the data pertaining to this one region) can completely change the underlying economic patterns. The larger the region the less the likelihood of such an occurrence. It is, for example, well known that population forecasts for the United States are likely to be more accurate than forecasts for any small region or state.

A special problem exists in the projection of employment and population in the State of Utah and indirectly in the Provo Metropolitan Area because of the large and uncertain role of national defense activities in Utah. The impact on the Utah economy of both the direct and indirect defense activities is very substantial, and no other of the ten industrial categories is as uncertain with respect to developments some ten or twenty years in the future. Future defense programs had to be arbitrarily assumed, and thus any unanticipated major

changes in defense activities in Utah could materially change the employment and population estimates of this study.

Finally, a special problem exists in the projection of employment and population in the Provo Metropolitan Area because of the uncertain rate of growth of the Brigham Young University in the next 15 to 20 years. No firm information could be obtained from the B.Y.U. officials as to whether the past rate of growth will likely continue for some time or whether a ceiling on enrollment would be imposed in the near future. Since there was no way to escape the decision, it was decided to use the enrollment estimates of the Utah Coordinating Council of Higher Education. The relatively large size of Brigham Young University, with respect to employment and population in Utah County, makes the decision about the future growth of B.Y.U. a very important one.

SECTION II

THE ECONOMIC PATTERN, 1952-1962

The basic data for the determination of employment patterns and trends for the period 1952 to 1962 in the three governmental units included in this study are given in Tables 1, 2 and 3--Table 1, the Provo Metropolitan Area; Table 2, the State of Utah, and Table 3, the United States. The tables give the total employment in each of the ten categories and, with the exception of the Agriculture and Service categories, the employment in the principal sub-groups of each category.

In addition to these classified employees, the tables give the number of workers in the nonclassified groups; self-employed and unpaid family workers; private household workers; unemployed; and, in the Provo Metropolitan Area and Utah, those involved in labor disputes. The necessary adjustment figures for multiple job holding among classified workers and statistical discrepancies are also shown in the tables.

The sum of the total classified workers and the various nonclassified groups is shown in the tables as the total civilian force.

Analysis of the Basic Employment Data

The basic hypothesis tested in the analysis of the employment data for the three levels--United States, Utah and the Provo Metropolitan Area--was that the economic patterns were sufficiently regular and stable to justify the projection of

TABLE 1

CIVILIAN LABOR FORCE BY MAJOR CATEGORIES IN THE PROVO METROPOLITAN AREA
1952 to 1962

Category	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
I. Agriculture	2,897	2,836	2,683	2,739	2,768	2,506	2,482	2,383	2,321	2,195	2,263
II. Mining and Mineral Production	89	104	107	125	138	134	125	98	121	150	136
Iron ores	--	--	--	--	--	--	--	--	--	--	--
Copper ores	--	--	--	--	--	--	--	--	--	--	--
Lead and zinc ores	3	6	4	3	2	1	2	1	1	1	2
Uranium, radium, vanadium ores	--	--	--	1	4	1	1	--	--	--	--
Other metal mining	8	6	10	12	9	12	13	18	20	49	45
Coal mining	--	--	--	--	--	--	--	--	--	--	--
Crude petroleum and natural gas	5	4	3	6	10	5	4	3	1	--	--
Mining and quarrying of non-metallic minerals, except fuels	73	88	90	103	113	115	105	76	99	100	89
III. Manufacturing	6,367	7,479	7,032	8,231	8,678	8,774	7,622	6,886	7,605	7,365	6,935
Food and kindred products	672	669	648	661	712	719	733	676	595	573	584
Apparel and other finished products	245	294	275	305	357	330	300	284	333	375	420
Printing, publishing and allied industries	105	109	111	108	111	110	121	126	131	133	137
Chemicals and allied products	146	133	135	185	290	273	271	197	176	220	207
Petroleum, refining and related industries	24	19	15	15	23	23	20	26	13	20	23
Stone, clay and glass products	104	103	125	268	388	262	262	290	279	324	266
Primary metals industries	5,229	6,152	5,504	6,427	6,472	6,719	5,591	4,991	5,832	5,412	4,943
Blast furnaces, steelworks, rolling mills	4,882	5,777	5,176	5,508	5,520	5,876	5,243	4,634	5,468	5,004	4,515
Fabricated metal products	127	108	158	194	229	216	245	197	131	181	222
Machinery, equipment and supplies	6	9	7	9	12	11	10	15	22	20	22
Transportation equipment	--	--	--	--	--	2	5	--	--	--	2
Other manufacturing	56	55	54	59	84	109	64	84	93	107	109
IV. Defense	--	--	--	--	1	4	1	--	4	2	6
Ordnance and accessories	--	--	--	--	--	--	--	--	--	--	--
Aircraft and parts	--	--	--	--	1	4	1	--	--	--	--
Electronics	--	--	--	--	--	--	--	--	4	2	6
Civilian employees of defense department	--	--	--	--	--	--	--	--	--	--	--
V. Government	2,775	2,947	3,152	3,326	3,577	3,721	3,889	3,861	4,341	4,462	4,598
Federal government except defense	315	342	337	278	307	341	430	480	510	551	571
Educational services	--	--	--	--	--	--	--	--	--	--	--
State government	2,460[a]	2,605[a]	2,815[a]	3,048[a]	3,270[a]	3,380[a]	947	959	993	1,032	1,065
Educational services	1,221[b]	1,268[b]	1,373[b]	1,498[b]	1,581[b]	1,631[b]	284[c]	293	312	337	357
Local government	a	a	a	a	a	a	2,512	2,422	2,838	2,879	2,962
Educational services	b	b	b	b	b	b	1,310[c]	1,227	1,503	1,811	1,882

TABLE 1 (Cont'd)

CIVILIAN LABOR FORCE BY MAJOR CATEGORIES IN THE PROVO METROPOLITAN AREA
1952 to 1962

Category	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
VI. Construction	1,216	1,220	1,088	1,391	1,872	1,797	1,208	1,291	1,469	1,247	1,591
Building construction--general contractors	445	387	479	459	572	456	379	341	359	344	399
Construction other than building--general contractors	318	350	209	179	260	295	235	277	273	220	353
Special trade contractors	453	483	400	753	1,040	1,046	594	673	837	683	839
VII. Transportation, Communication & Utilities	1,320	1,418	1,349	1,461	1,309	1,247	1,302	1,245	1,203	1,136	1,146
Railroad transportation	560	586	497	558	541	475	460	398	388	407	406
Local and interurban transit	61	58	65	65	53	40	37	36	40	42	37
Motor freight transportation & warehousing	40	46	55	57	75	94	101	108	133	125	125
Communications	386	436	432	493	351	343	403	415	360	287	300
Electric, gas and sanitary services	267	286	294	282	284	287	298	282	276	270	264
Other	6	6	6	6	6	8	3	6	6	5	14
VIII. Wholesale and Retail Trade	3,726	3,783	3,743	3,941	4,249	4,416	4,425	4,579	4,659	4,541	4,649
Wholesale trade	476	438	438	411	444	453	471	502	533	522	552
Retail trade	3,250	3,345	3,305	3,530	3,805	3,963	3,954	4,077	4,126	4,019	4,097
IX. Finance, Insurance, and Real Estate	354	367	402	512	557	543	558	590	595	575	603
Banking and other credit agencies	214	226	249	280	330	336	343	363	372	373	379
Insurance	28	32	30	38	39	47	51	65	68	60	76
Real estate	70	75	92	157	152	122	152	149	143	131	138
Other	42	34	31	37	36	38	12	13	12	11	10
X. Services	2,329	2,526	2,895	3,190	3,493	4,019	4,286	4,777	5,170	5,434	5,747
Educational services	1,172	1,282	1,460	1,610	1,755	2,089	2,404	2,819	2,975	3,128	3,267
Miscellaneous and Retroactive Liability	7	7	7	6	14	10	5	9	6	3	2
Total Classified Employment	21,436	22,859	22,458	24,922	26,656	27,171	25,903	25,719	27,494	27,110	27,676
Self-Employed & Unpaid Family Workers / Private Household Workers	3,011	3,211	3,310	3,743	3,011	4,174	4,176	4,168	4,365	4,333	4,400
Labor Disputes	0	0	0	0	0	0	0	1,478	0	0	0
Adjustment for Multiple Job Holding and Statistical Discrepancy	-370	-400	-593	-666	-956	-987	-938	-934	-1,008	-998	-1,017
Total Civilian Employment	24,077	25,670	25,175	27,999	28,711	30,358	29,141	30,431	30,851	30,445	31,059
Unemployment	1,360	1,093	1,659	1,175	1,360	1,160	2,682	2,160	2,520	2,892	2,690
Total Civilian Labor Force	25,437	26,763	26,834	29,174	30,071	31,518	31,823	32,591	33,371	33,337	33,749

[a]Combined total.
[b]Combined total.
[c]Estimate.

Source: Utah Department of Employment Security.

TABLE 2

CIVILIAN LABOR FORCE BY MAJOR CATEGORIES IN UTAH
1952 to 1962

	Category	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
I.	Agriculture	26,278	26,886	25,495	26,022	24,980	23,842	23,499	22,796	22,175	21,015	21,500
II.	Mining and Mineral Production	13,529	13,705	13,154	14,320	15,703	16,257	14,137	12,693	13,844	13,759	13,113
	Iron ores	523	704	582	506	501	552	459	460	512	494	406
	Copper ores	4,850	4,959	4,687	4,930	6,007	5,762	4,537	3,774	5,031	5,162	5,127
	Lead and zinc ores	2,187	1,626	1,555	1,677	1,677	1,349	1,122	1,021	981	932	1,021
	Uranium, radium, vanadium ores	0	0	0	2,063	2,012	2,229	1,839	1,704	1,524	1,376	1,062
	Other metal mining	783	983	1,637	501	335	170	410	482	458	609	622
	Coal mining	3,780	4,044	3,163	2,988	3,085	3,300	2,943	2,526	2,493	2,331	2,057
	Crude petroleum and natural gas	935	872	976	1,014	1,349	2,083	1,994	1,836	1,942	1,950	1,869
	Mining and quarrying of non-metallic minerals, except fuels	471	517	554	641	737	812	833	890	923	905	949
III.	Manufacturing	32,056	33,673	32,458	34,984	37,200	38,216	35,979	35,349	37,499	37,718	38,800
	Food and kindred products	9,093	9,235	9,244	9,570	9,834	10,197	9,817	9,920	10,200	9,978	9,704
	Apparel and other finished products	2,060	2,340	1,928	1,998	2,075	2,042	1,614	1,527	1,790	1,952	2,107
	Printing, publishing & allied industries	2,289	2,064	2,100	2,123	2,201	2,234	2,332	2,425	2,563	2,737	2,783
	Chemicals and allied products	841	872	892	998	1,018	1,204	1,218	1,124	1,134	1,180	1,109
	Petroleum, refining and related industries	1,411	1,521	1,523	1,541	1,695	1,533	1,564	1,531	1,491	1,231	1,246
	Stone, clay and glass products	1,784	1,918	1,964	2,388	2,594	2,411	2,417	2,574	2,647	2,750	2,712
	Primary metals industries	9,150	9,876	9,200	10,101	10,680	11,061	9,107	7,745	9,043	8,626	8,010
	Blast furnaces, steel works, rolling mills	4,902	5,784	5,184	5,511	5,739	5,976	5,271	4,647	5,482	5,013	4,529
	Fabricated metal products	1,705	1,714	1,890	2,056	2,326	2,400	2,444	2,481	2,441	2,784	2,691
	Machinery, equipment and supplies	1,506	1,735	1,449	1,700	1,968	2,213	2,261	2,379	2,569	2,803	2,901
	Transportation equipment	73	77	82	168	254	297	348	489	415	499	2,224
	Other manufacturing	2,144	2,321	2,186	2,341	2,555	2,624	2,857	3,154	3,206	3,178	3,313
IV.	Defense	28,832	22,581	19,690	20,022	19,800	19,708	21,326	25,281	27,618	30,219	34,043
	Ordnance and accessories	1	2	3	0	3	462	1,113	2,282	3,247	3,135	4,148
	Aircraft and parts	--	--	--	--	53	438	1,349	4,014	5,695	8,663	9,950
	Electronics	--	--	148	160	244	308	414	585	576	421	745
	Civilian employees of defense department	28,831	22,579	19,539	19,862	19,500	18,500	18,450	18,400	18,100	18,000	19,200
V.	Government	29,492	33,740	33,390	33,805	35,195	37,733	39,763	41,910	44,169	47,084	49,351
	Federal government except defense	5,355	9,154	8,144	7,452	7,808	8,853	9,153	9,645	9,959	10,622	10,966
	Educational services	--	--	--	--	--	--	416	407	410	414	411
	State government	8,116	8,226	8,403	8,712	9,126	9,579	10,426	10,925	11,525	12,793	13,388
	Educational services	--	--	--	--	--	--	5,118	5,297	5,635	6,544	6,997
	Local government	16,021	16,360	16,843	17,641	18,261	19,301	20,184	21,340	22,685	23,669	24,997
	Educational services	--	--	--	--	--	--	12,623	13,233	14,169	14,735	15,620

TABLE 2 (Cont'd)

CIVILIAN LABOR FORCE BY MAJOR CATEGORIES IN UTAH
1952 to 1962

Category	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
VI. Construction	11,770	11,191	11,364	14,287	15,599	14,833	14,885	15,715	14,851	15,569	17,790
Building construction--general contractors	3,588	3,661	4,019	5,046	4,958	4,397	4,597	5,171	4,737	4,735	5,187
Construction other than building--general contractors	3,578	2,820	2,300	3,245	4,142	4,208	4,184	3,813	3,339	3,990	4,974
Special trade contractors	4,604	4,710	5,045	5,996	6,499	6,228	6,104	6,731	6,775	6,844	7,629
VII. Transportation, Communication & Utilities	22,985	23,375	22,375	22,924	22,885	23,085	22,306	22,389	22,155	21,942	21,932
Railroad transportation	10,774	10,528	9,576	9,605	9,287	8,926	8,383	8,355	7,996	7,818	7,736
Local and interurban transit	1,262	1,318	1,227	1,159	1,122	1,116	1,059	1,060	1,071	1,040	999
Motor freight transportation & warehousing	3,464	3,548	3,558	3,934	4,194	4,262	4,172	4,396	4,549	4,626	4,622
Communications	3,916	4,200	4,157	4,331	4,328	4,444	4,427	4,375	4,376	4,363	4,394
Electric, gas and sanitary services	2,554	2,740	2,825	2,845	2,903	3,250	3,248	3,187	3,120	3,075	3,105
Other	1,015	1,041	1,032	1,050	1,051	1,087	1,017	1,016	1,043	1,020	1,076
VIII. Wholesale and Retail Trade	46,938	48,655	48,379	50,195	52,778	53,996	54,165	57,327	59,583	60,559	63,411
Wholesale trade	12,944	13,220	13,522	13,467	14,283	14,866	14,530	15,220	15,380	15,984	17,057
Retail trade	33,994	35,435	34,857	36,728	38,495	39,130	39,635	42,107	44,203	44,575	46,354
IX. Finance, Insurance and Real Estate	7,180	7,710	8,255	9,192	9,508	9,722	10,144	10,788	11,292	11,553	12,034
Banking and other credit agencies	3,300	3,544	3,854	4,417	4,589	4,702	4,500	4,788	5,133	5,373	5,689
Insurance	2,026	2,252	2,323	2,394	2,453	2,620	2,735	2,958	3,052	3,069	3,179
Real estate	1,854	1,915	2,078	2,381	2,466	2,399	2,514	2,602	2,530	2,546	2,654
Other	--	--	--	--	--	--	392	440	577	565	512
X. Services	21,448	22,205	22,764	24,215	25,385	26,793	27,891	30,312	31,761	33,270	35,126
Educational services	1,632	1,764	1,864	2,065	2,269	2,624	2,980	3,402	3,558	3,774	3,935
Miscellaneous and Retroactive Liability	1,063	1,253	864	892	951	833	851	896	938	959	1,008
Total Classified Employees	241,571	244,974	238,188	250,858	259,984	265,018	264,946	275,456	285,885	293,647	308,108
Self-Employed & Unpaid Family Workers Private Household Workers	31,900	31,900	32,400	34,600	36,100	37,100	39,400	40,900	42,000	44,300	44,100
Labor Disputes	1,200	500	0	1,000	400	0	200	3,900	500	100	100
Adjustment for Multiple Job Holding and Statistical Discrepancy	-4,271	-4,374	-6,388	-6,758	-9,384	-9,618	-9,646	-10,156	-10,585	-10,847	-11,408
Total Civilian Employment	270,400	273,000	264,200	279,700	287,100	292,500	294,900	310,100	317,800	327,200	340,900
Unemployment	8,600	9,000	14,000	11,500	10,000	10,900	16,200	14,400	15,400	17,300	15,900
Total Civilian Labor Force	279,000	282,000	278,200	291,200	297,100	303,400	311,100	324,500	333,200	344,500	356,800

Source: Utah Department of Employment Security.

TABLE 3

CIVILIAN LABOR FORCE BY MAJOR CATEGORIES IN THE UNITED STATES[a] 1952 to 1962
Thousands)

	Category	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
I.	Agriculture	6,792	6,555	6,495	6,718	6,572	6,222	5,844	5,863	5,723	5,463	5,190
II.	Mining and Mineral Production	898.0	866.0	791 0	792.0	822.0	828.0	751.0	731.0	709.0	666.4	647.0
	Iron ores	33.5	40.1	35 2	34.2	35.1	39.4	31.8	27.7	33.2	27.5	27.5
	Copper ores	26.5	28.6	27 9	28.9	33.3	32.3	27 7	23.3	28.3	28.9	28.5
	Lead and zinc ores	---	---	---	---	---	---	---	---	---	---	---
	Uranium, radium, vanadium ores	---	---	---	---	---	---	---	---	---	---	---
	Other metal mining	---	---	---	---	---	---	---	---	---	---	---
	Coal mining	391.0	342.7	268 5	250.3	257.9	258.3	215.4	196.9	182.3	155.5	144.4
	Crude petroleum and natural gas	303.4	311.4	318 1	331.9	340.1	344 0	327.5	33 .9	313.9	308.9	304.4
	Mining and quarrying of non-metallic minerals, except fuels	103 8	105.9	105.1	108.3	115.2	114.3	114.9	119.6	119.5	114.9	114.0
III.	Manufacturing	15,783.2	16, 519.0	15,367.5	15,979.4	16,268.7	16.137.9	14,837.7	15 527.0	15,675.8	15,169.6	15,584.6
	Food and kindred products	1,933 4	1,942.5	1,921.6	1,927.2	1,941.5	1,901.4	1,867.3	1,884.9	1,886.8	1,870.7	1,861.2
	Apparel and other finished products	1,216.4	1,248.0	1,183 6	1,219.2	1,223.4	1,210.1	1,171.8	1,224.9	1,228.4	1,199.5	1,235.2
	Printing, publishing & allied industries	779.9	802.8	813 9	834.7	862.0	870.0	872.6	889.5	917.2	926.3	933.2
	Chemicals and allied products	730.1	768.2	752 7	773.1	796.5	810.0	794.1	809.6	829.6	830.2	849.6
	Petroleum, refining & related industries	234.6	241.4	238.1	237.	235.5	232.2	223.8	215.3	211.7	203.0	196.0
	Stone, clay and glass products	564 0	581.3	552.6	588.4	605.3	594.4	562.4	601.7	595.3	566.8	572.4
	Primary metals industries	1,282 1	1,383.1	1,219 3	1,322.5	1,355.3	1,355.3	1,153 6	1,181 9	1,228.7	1,142.4	1,166.0
	Blast furnaces, steel works, rolling mills	638.0	726.1	645 5	706.9	706 6	719.9	601.1	587.5	652.5	599.9	597.5
	Fabricated metal products	1,064.4	1,156.4	1,069 9	1,122.4	1.140.4	1,167.3	1,076.9	1,120.8	1,128.6	1,076.4	1,117.6
	Machinery, equipment and supplies	2,702.4	2,887.7	2,608.1	2,689.3	2,894.7	2,929.7	2,432.5	2.630.6	2,691.8	2.609.9	2,743.8
	Transportation equipment	1.032.6	1,173.6	971 2	1,093.3	1.015.2	1,013 3	823.7	915.0	943.5	853.1	938.1
	Other manufacturing	4,243.3	4,334.0	4,036.5	4,172.2	4,198.9	4,054.2	3,859.0	4,052.8	4,014.2	3,891.3	3,971.5
IV.	Defense	2 048.5	2,160.4	1,973.5	1,930.4	2,009.9	2,043.3	2,068.2	2,105.9	2,026.9	2,040.9	2,129.4
	Ordnance and accessories	178.7	234.3	163 3	141.2	138.5	140.2	145.4	173.0	187.3	200.6	215.1
	Aircraft and parts	670.6	795.5	782 9	761.3	837 3	895.8	783.6	755.4	677.8	669.4	707.3
	Electronics	---	---	---	---	---	---	---	---	---	---	---
	Civilian employees of defense department	1,199.2	1,130.6	1,027.3	1,027.9	1 034.1	1,007.3	960.3	966.2	940.6	943.7	963.8
V.	Government	5,409.8	5,514.4	5,723.7	5,885.7	6,243.3	6,618.5	6,932.5	7,224	7,579.1	7,883.4	8,221.7
	Federal government except defense	1,220.8	1,174.4	1,160.7	1,159.1	1,174.9	1,209.7	1,230.7	1,266.8	1,329.4	1,335.3	1,377.2
	Educational services	---	---	---	---	---	---	---	---	---	---	---
	State government	4,189.0[b]	4,340.0[b]	4,563.0[b]	1,215.4	1,300.6	1,383.0	1,470.9	1,541 1	1,592.7	1,663.6	1,726.3
	Educational services[c]	na	na	na	na	---	---	---	---	---	---	---
	Local government	--- b	--- b	--- b	3,511 2	3,767.2	4,025.8	4,230.9	4,416.2	4,657.0	4,884.5	5,118.2
	Educational services[c]	na	na	na	na	2,219.1	2,401 8	2,563.7	2,721.5	2,983.3	3,175.4	3,400.3

TABLE 3 (Cont'd)

CIVILIAN LABOR FORCE BY MAJOR CATEGORIES IN THE UNITED STATES[a] 1952 to 1962
(Thousands)

	Category	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962
VI.	Construction	2,633.4	2,623.3	2,611.6	2,801.8	2,998.9	2,923.4	2,778.4	2,955.4	2,881.8	2,759.6	2,696.0
	Building construction--general contractors	983.2	969.2	937.1	997.2	1,074.6	986.8	893.6	960.1	911.7	860.8	831.0
	Construction other than building--general contractors	481.4	480.1	471.0	483.8	556.7	576.0	564.6	585.8	581.3	565.6	555.0
	Special trade contractors	1,168.8	1,174.0	1,203.5	1,320.8	1,367.6	1,360.6	1,320.2	1,409.5	1,388.8	1,333.2	1,310.0
VII.	Transportation, Communication & Utilities	4,248.0	4,290.0	4,084.0	4,141.0	4,244.0	4,241.0	3,976.1	4,010.1	4,017.1	3,923.2	3,925.0
	Railroad transportation	1,399.8	1,376.9	1,215.4	1,205.4	1,190.4	1,121.4	957.4	925.2	886.9	819.5	801.4
	Local and interurban transit	na	na	na	na	na	na	284.8	281.1	282.6	270.0	264.1
	Motor freight transportation & warehousing	699.1	731.4	718.7	764.9	803.2	804.2	777.8	848.2	873.8	875.2	910.0
	Communications	na	na	na	na	na	na	860.0	836.6	838.7	826.2	819.0
	Electric, gas & sanitary services	571.7	581.5	585.1	590.9	600.7	610.7	610.4	611.6	613.0	610.7	606.6
	Other	1,577.4	1,600.2	1,564.8	1,579.8	1,649.7	1,704.7	485.7	507.4	522.1	521.6	523.9
VIII.	Wholesale and Retail Trade	10,004	10,247	10,235	10,535	10,858	10,886	10,750.1	11,124.9	11,412.2	11,368.0	11,571.0
	Wholesale trade	2,687	2,727	2,739	2,796	2,884	2,893	2,848.0	2,941.0	3,009.0	3,008.0	3,071.1
	Retail trade	7,317	7,520	7,496	7,740	7,974	7,992	7,902.1	8,183.9	8,403.2	8,360.0	8,499.9
IX.	Finance, Insurance & Real Estate	2,069.0	2,146.0	2,234.0	2,335.0	2,429.0	2,477.0	2,519.1	2,596.5	2,684.3	2,748.2	2,793.1
	Banking and other credit agencies	489.6	513.5	529.3	549.3	578.7	602.9	846.0	884.1	930.9	957.6	981.1
	Insurance	---	---	---	---	---	---	998.7	1,007.9	1,035.2	1,056.5	1,065.8
	Real estate	---	---	---	---	---	---	506.8	521.4	427.3	531.4	542.0
	Other	1,579.4	1,632.5	1,704.7	1,785.7	1,850.3	1,874.1	167.6	183.1	190.9	202.7	204.2
X.	Services	5,730.0	5,867.0	6,002.0	6,274.0	6,536.0	6,749.0	6,811.0	7,105.0	7,361.0	7,516.0	7,757.0
	Educational services	---	---	---	---	---	---	---	---	173.0	---	---
Total Classified Employment		55,616	56,788	55,517	57,392	58,982	59,126	57,268	59,243	60,070	59,538	60,515
Self-Employed & Unpaid Family Workers		6,101	6,217	6,325	6,410	6,517	6,715	6,790	6,895	6,982	7,050	6,894
Private Household Workers		1,922	1,982	1,919	2,216	2,359	2,328	2,456	2,520	2,489	2,594	2,626
Adjustment for Multiple Job Holding and Statistical Discrepancy		-2,604	-3,042	-2,871	-3,074	-3,150	-3,158	-2,548	-2,793	-2,860	-2,385	-2,189
Total Civilian Employment		61,035	61,945	60,890	62,944	64,708	65,011	63,966	65,865	66,681	66,797	67,846
Unemployment		1,931	1,870	3,578	2,903	2,822	2,936	4,681	3,830	3,931	4,806	4,007
Total Civilian Labor Force		62,966	63,815	64,468	65,847	67,530	67,947	68,647	69,695	70,612	71,603	71,853

[a]Includes Alaska beginning 1959
[b]Combines total
[c]Combined total
na - Not available

Source: U.S. Bureau of Labor Statistics

those patterns into the future. Clearly, if there had been major changes, either within one of the levels or as between any two of the levels, the projection of the base period growth patterns would not have been justified. In general, it was found that the individual major industry groups evidenced a considerable degree of uniformity during the base period for each of the three levels, that the trend in the relationships among the three groups was reasonably constant, and that the more obvious deviations from patterns of regularity could be explained in terms of the historical events during the period.

The first step in the analysis of the data was to determine the percentage of total classified employment in each major industry category for each year for each of the three levels of government. The purpose of computing the percentages was to detect tendencies on the part of the individual major industry categories to grow at a faster or slower rate than total employment. These percentages are given in Table 4; while Chart 1 shows graphically the changes, if any, of the principal categories over the 11-year period.

The next step in the analysis of percentage changes was the construction of location quotients. There are two sets of location quotients: The first set defines, in the case of the Provo Metropolitan Area, the ratio of the percentage employed in the Provo Metropolitan Area to the percentage employed in Utah in the same classification. For the State of Utah, the location quotient defines the percentage employed in Utah to the percentage employed in the United States in the same classification.

Location quotients have usually been used to identify industries which are oriented towards the export market. However, they have been differently applied

TABLE 4

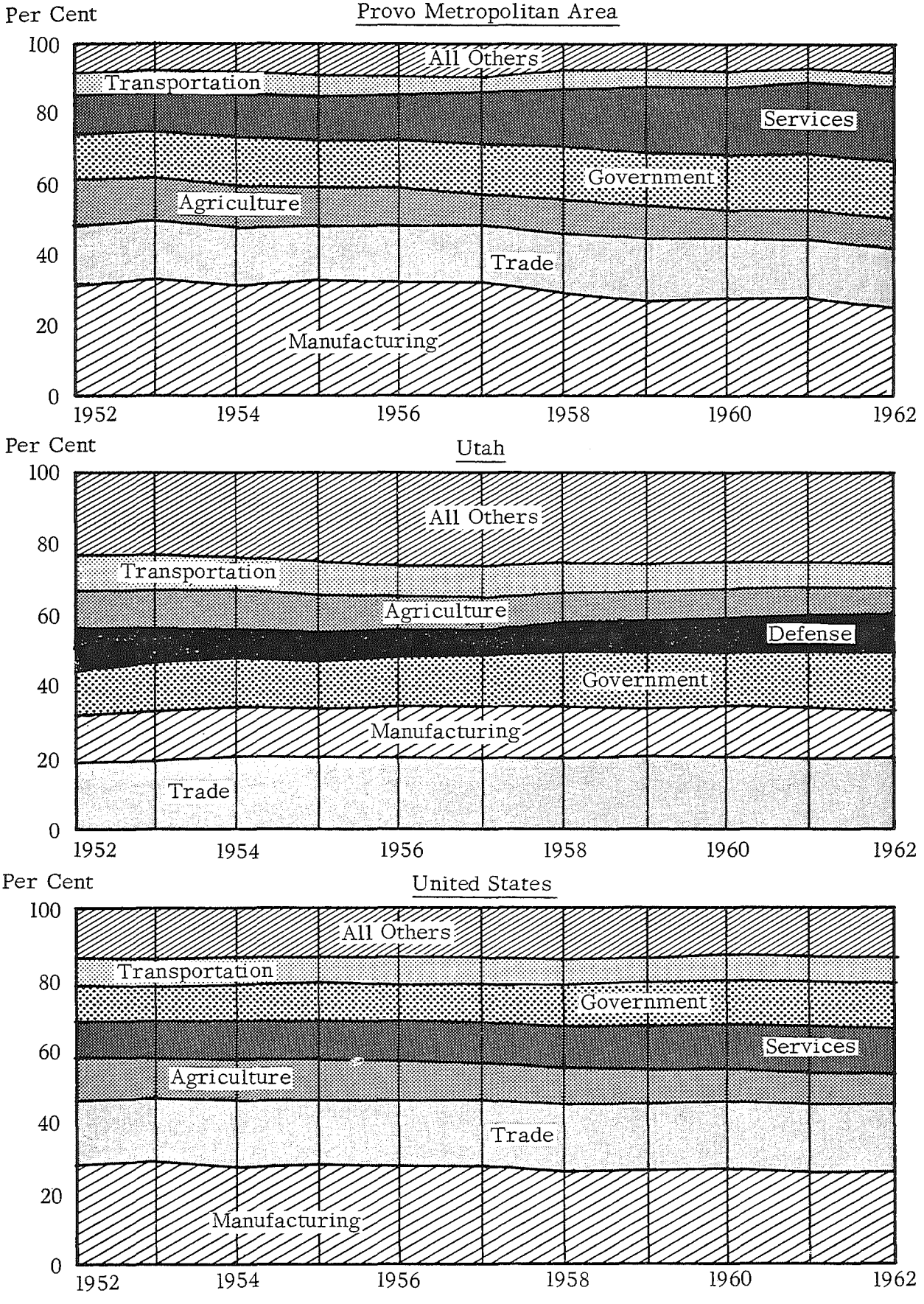
PERCENTAGE DISTRIBUTION OF CLASSIFIED WORKERS BY MAJOR CATEGORIES
PROVO METROPOLITAN AREA, UTAH AND UNITED STATES
ACTUAL 1952 to 1962; PROJECTED 1965, 1970, 1975, 1980

	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1965	1970	1975	1980
Provo Metropolitan Area															
I. Agriculture	13.5	12.4	12.0	11.0	10.4	9.2	9.6	9.3	8.4	8.1	8.2	7.0	5.5	4.0	3.2
II. Mining and Mineral Production	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.6	0.5	0.5	0.4	0.4	0.3
III. Manufacturing	31.3	33.5	31.3	33.0	32.6	32.3	29.4	26.8	27.7	27.2	25.1	23.6	21.4	19.4	18.0
IV. Defense	- -	- -	- -	- -	0.0	0.0	0.0	- -	0.0	0.0	0.0	0.0	0.0	0.0	0.0
V. Government	12.9	12.9	14.0	13.3	13.4	13.7	15.0	15.0	15.8	16.5	16.6	17.9	19.7	21.1	22.8
VI. Construction	5.7	5.3	4.8	5.6	7.0	6.6	4.7	5.0	5.3	4.6	5.7	5.1	4.9	4.8	4.8
VII. Transportation, Communication and Utilities	6.2	6.2	6.0	5.9	4.9	4.6	5.0	4.8	4.4	4.2	4.1	3.8	3.4	3.0	2.7
VIII. Wholesale and Retail Trade	17.4	16.6	16.7	15.8	15.9	16.3	17.1	17.8	16.9	16.8	16.8	16.4	16.0	15.6	15.6
IX. Finance, Insurance & Real Estate	1.7	1.6	1.8	2.1	2.1	2.0	2.2	2.3	2.2	2.1	2.2	2.3	2.6	3.0	3.5
X. Services	10.9	11.1	12.9	12.8	13.1	14.8	16.5	18.6	18.8	20.0	20.8	23.4	26.1	28.7	29.1
TOTAL	100.1	100.1	100.0	100.0	99.9	100.0	100.0	100.0	99.9	100.1	100.0	100.0	100.0	100.0	100.0
State of Utah															
I. Agriculture	10.9	11.0	10.7	10.4	9.6	9.0	8.9	8.3	7.8	7.2	7.0	6.2	5.0	4.2	3.6
II. Mining and Mineral Production	5.6	5.6	5.5	5.7	6.1	6.2	5.4	4.6	4.9	4.7	4.3	4.2	3.6	3.2	2.8
III. Manufacturing	13.3	13.8	13.7	14.0	14.4	14.5	13.6	12.9	13.2	12.9	12.6	12.6	12.0	11.7	11.2
IV. Defense	12.0	9.3	8.3	8.0	7.6	7.5	8.1	9.2	9.7	10.3	11.1	10.3	11.2	9.8	8.6
V. Government	12.2	13.8	14.1	13.5	13.6	14.3	15.1	15.3	15.5	16.1	16.1	17.0	18.4	20.1	21.9
VI. Construction	4.9	4.6	4.8	5.7	6.0	5.6	5.6	5.7	5.2	5.3	5.8	5.5	5.2	5.1	4.9
VII. Transportation, Communication and Utilities	9.6	9.6	9.4	9.2	8.8	8.7	8.4	8.2	7.8	7.5	7.1	6.8	5.9	5.2	4.5
VIII. Wholesale and Retail Trade	19.5	20.0	20.4	20.1	20.4	20.4	20.5	20.9	20.9	20.7	20.6	21.0	21.1	21.5	21.7
IX. Finance, Insurance & Real Estate	3.0	3.2	3.5	3.7	3.7	3.7	3.8	3.9	4.0	3.9	3.9	4.3	4.6	5.0	5.3
X. Services	8.9	9.1	9.6	9.7	9.8	10.1	10.6	11.0	11.1	11.4	11.4	12.1	13.0	14.3	15.5
TOTAL	99.9	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.1	100.0	99.9	100.0	100.0	100.0	100.0
United States															
I. Agriculture	12.2	11.5	11.7	11.7	11.1	10.5	10.2	9.9	9.6	9.2	8.6	8.1	6.9	5.9	5.1
II. Mining and Mineral Production	1.6	1.5	1.4	1.4	1.4	1.4	1.3	1.2	1.2	1.1	1.1	1.0	0.8	0.6	0.5
III. Manufacturing	28.4	29.1	27.7	27.8	27.6	27.3	25.9	26.2	26.1	25.5	25.8	24.8	23.4	22.2	21.1
IV. Defense	3.7	3.8	3.6	3.4	3.4	3.5	3.6	3.6	3.4	3.4	3.5	3.4	3.1	2.9	2.7
V. Government	9.7	9.7	10.3	10.3	10.6	11.2	12.1	12.2	12.6	13.2	13.6	14.6	16.4	17.5	17.9
VI. Construction	4.7	4.6	4.7	4.9	5.1	4.9	4.9	5.0	4.8	4.6	4.5	4.5	4.4	4.4	4.4
VII. Transportation, Communication and Utilities	7.6	7.6	7.4	7.2	7.2	7.2	6.9	6.8	6.7	6.6	6.5	6.2	5.7	5.3	4.9
VIII. Wholesale and Retail Trade	18.0	18.0	18.4	18.4	18.4	18.4	18.8	18.8	19.0	19.1	19.1	19.3	19.7	20.1	20.5
IX. Finance, Insurance & Real Estate	3.7	3.8	4.0	4.1	4.1	4.2	4.4	4.4	4.5	4.6	4.6	4.9	5.4	5.9	6.5
X. Services	10.3	10.3	10.8	10.9	11.1	11.4	11.9	12.0	12.3	12.6	12.8	13.3	14.2	15.2	16.3
TOTAL	99.9	99.9	100.0	100.1	100.0	100.0	100.0	100.1	100.2	99.9	100.1	100.1	100.0	100.0	99.9

Source: Years 1952 to 1962 computed from Tables 1, 2, 3; years 1965 to 1980 from Tables 18, 19, 20.

CHART 1

PERCENTAGE DISTRIBUTION OF CLASSIFIED WORKERS
BY MAJOR CATEGORIES, 1952 TO 1962



Source: Table 4

in the present study. Variations in the quotient throughout the base period have been used to define trends in the role played by the local area in the state economy and trends in the role played by the state economy in the national economy. To the extent that the comparison of ratios leads to a conclusion that the local area is playing a changing role with respect to the state, the direction of change is used as one of the criteria for projecting future developments. The same considerations are used in the case of the relationship between the state and the national economy.

The information is summarized in Tables 5 and 6. Table 5 is entitled, COMPARISON OF THE RELATIVE IMPORTANCE OF INDUSTRIAL CATEGORIES IN THE PROVO METROPOLITAN AREA WITH THE SAME CATEGORIES IN UTAH (LOCATION QUOTIENTS) ACTUAL 1952-1962, PROJECTED 1965, 1970, 1975 and 1980. It is to be interpreted as follows: In the first column the name of the major industry classification is given. The subsequent columns are headed by the date of the observation. The last four columns contain the projections for 1965, 1970, 1975 and 1980 which will be discussed below. Under each of the years there appears a fraction opposite the name of the major industry classification. The numerator of the fraction is the percentage of total classified workers in the local area employed in the designated category; the denominator of the fraction is the percentage of total classified workers in the State of Utah employed in the designated category. The number resulting from performing the division, and shown to the right of the fraction, is the location quotient.

For example, in Table 5, opposite X--Services and under 1962, it is noted that 20.8 per cent of the classified employees in the Provo area worked in the service industry as compared with 11.4 per cent of the classified workers in Utah.

TABLE 5

COMPARISON OF THE RELATIVE IMPORTANCE OF INDUSTRIAL CATEGORIES IN THE PROVO METROPOLITAN AREA WITH THE SAME CATEGORIES IN UTAH (LOCATION QUOTIENTS)
ACTUAL, 1952-1962; PROJECTED, 1965, 1970, 1975, 1980

Category	1952		1953		1954		1955		1956		1957		1958		1959	
	Ratio	L Q.	Ratio	L.Q.	Ratio	L.Q.	Ratio	L.Q.	Ratio	L.Q.	Ratio	L.Q.	Ratio	L.Q.	Ratio	L.Q.
I. Agriculture																
% P.M.A	13.5	1.24	12.4	1.13	12.0	1.12	11.0	1.06	10.4	1.08	9.2	1.02	9.6	1.08	9.3	1.12
% Utah	10.9		11.0		10.7		10.4		9.6		9.0		8.9		8.3	
I. Mining and Minera Production																
% P M.A.	0.5	0.09	0.5	0.09	0.5	0.09	0.5	0.09	0.5	0.08	0.5	0.08	0.5	0.09	0.4	0.09
% Utah	5.6		5.6		5.5		5.7		6.1		6.2		5.4		4.6	
III. Manufacturing																
% P.M.A.	31.3	2.35	33.5	2.43	31.3	2.28	33.0	2.36	32.6	2.26	32.3	2.23	29.4	2.16	26.8	2.08
% Utah	13.3		13.8		13.7		14.0		14.4		14.5		13.6		12.9	
IV. Defense																
% P.M.A.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Utah	12 0		9.3		8.3		8.0		7.6		7.5		8.1		9.2	
V. Government																
% P.M.A.	12.9	1.06	12.9	0.93	14.0	0.99	13.3	0.99	13.4	0.99	13.7	0.96	15.0	0.99	15.0	0.98
% Utah	12.2		13.8		14.1		13.5		13.6		14.3		15.1		15.3	
VI Construction																
% P.M.A.	5.7	1.16	5.3	1 15	4.8	1.0	5.6	0.98	7.0	1.17	6.6	1.18	4.7	0.84	5.0	0.88
% Utah	4.9		4.6		4.8		5.7		6.0		5.6		5.6		5.7	
VII. Transportation, Communication and Utilities																
% P.M.A.	6.2	0.65	6.2	0.65	6.0	0.64	5.9	0.64	4.9	0.56	4.6	0.53	5.0	0.60	4.8	0.59
% Utah	9.6		9.6		9.4		9.2		8.8		8.7		8.4		8.2	
VIII. Wholesale and Retail Trade																
% P.M.A.	17.4	0.89	16.6	0.83	16.7	0.82	15.8	0.79	15.9	0.78	16.3	0.80	17.1	0.83	17.8	0.85
% Utah	19.5		20.0		20.4		20.1		20.4		20.4		20.5		20.9	
IX. Finance, Insurance & Real Estate																
% P.M.A.	1.7	0.57	1.6	0.50	1.8	0.51	2.1	0.57	2.1	0.57	2.0	0.54	2.2	0.58	2.3	0.59
% Utah	3.0		3.2		3.5		3.7		3.7		3.7		3.8		3.9	
X. Services																
% P.M.A.	10.9	1.22	11.1	1.22	12.9	1.34	12.8	1.32	13.1	1.34	14.8	1.47	16.5	1.56	18.6	1.69
% Utah	8.9		9.1		9.6		9.7		9.8		10.1		10.6		11.0	

TABLE 5 (Cont'd)

COMPARISON OF THE RELATIVE IMPORTANCE OF INDUSTRIAL CATEGORIES IN THE PROVO METROPOLITAN AREA WITH THE SAME CATEGORIES IN UTAH (LOCATION QUOTIENTS) ACTUAL, 1952-1962; PROJECTED, 1965, 1970, 1975, 1980

Category	1960		1961		1962		1965		1970		1975		1980	
	Ratio	L.Q.	Ratio	L.Q.	Ratio	L.Q.	Ratio	L.Q.	Ratio	L.Q.	Ratio	L.Q.	Ratio	L.Q.
I. Agriculture														
% P.M.A. / % Utah	8.4 / 7.8	1.08	8.1 / 7.2	1.12	8.2 / 7.0	1.17	7.0 / 6.2	1.13	5.5 / 5.0	1.10	4.0 / 4.2	0.95	3.2 / 3.6	0.89
II. Mining and Mineral Production														
% P.M.A. / % Utah	0.4 / 4.9	0.08	0.6 / 4.7	0.13	0.5 / 4.3	0.12	0.5 / 4.2	0.12	0.4 / 3.6	0.11	0.4 / 3.2	0.13	0.3 / 2.8	0.11
III. Manufacturing														
% P.M.A. / % Utah	27.7 / 13.2	2.10	27.2 / 12.9	2.11	25.1 / 12.6	1.99	23.6 / 12.6	1.87	21.4 / 12.0	1.78	19.4 / 11.7	1.66	18.0 / 11.2	1.61
IV. Defense														
% P.M.A. / % Utah	0.0 / 9.7	0.0	0.0 / 10.3	0.0	0.0 / 11.1	0.0	0.0 / 10.3	0.00	0.0 / 11.2	0.00	0.0 / 9.8	0.00	0.0 / 8.6	0.00
V. Government														
% P.M.A. / % Utah	15.8 / 15.5	1.02	16.5 / 16.1	1.02	16.6 / 16.1	1.03	17.9 / 17.0	1.05	19.7 / 18.4	1.07	21.1 / 20.1	1.05	22.8 / 21.9	1.04
VI. Construction														
% P.M.A. / % Utah	5.3 / 5.2	1.02	4.6 / 5.3	0.87	5.7 / 5.8	0.98	5.1 / 5.5	0.93	4.9 / 5.2	0.94	4.8 / 5.1	0.94	4.8 / 4.9	0.98
VII. Transportation, Communication and Utilities														
% P.M.A. / % Utah	4.4 / 7.8	0.56	4.2 / 7.5	0.56	4.1 / 7.1	0.58	3.8 / 6.8	0.56	3.4 / 5.9	0.58	3.0 / 5.2	0.58	2.7 / 4.5	0.60
VIII. Wholesale and Retail Trade														
% P.M.A. / % Utah	16.9 / 20.9	0.81	16.8 / 20.7	0.81	16.8 / 20.6	0.82	16.4 / 21.0	0.78	16.0 / 21.1	0.76	15.6 / 21.5	0.73	15.6 / 21.7	0.72
IX. Finance, Insurance & Real Estate														
% P.M.A. / % Utah	2.2 / 4.0	0.55	2.1 / 3.9	0.54	2.2 / 3.9	0.56	2.3 / 4.3	0.54	2.6 / 4.6	0.57	3.0 / 5.0	0.60	3.5 / 5.3	0.66
X. Services														
% P.M.A. / % Utah	18.8 / 11.1	1.69	20.0 / 11.4	1.75	20.8 / 11.4	1.82	23.4 / 12.1	1.94	26.1 / 13.0	2.01	28.7 / 14.3	2.01	29.1 / 15.5	1.88

Source: Percentages from Table 4.

TABLE 6

COMPARISON OF THE RELATIVE IMPORTANCE OF INDUSTRIAL CATEGORIES IN UTAH WITH THE SAME CATEGORIES IN THE UNITED STATES (LOCATION QUOTIENTS)
ACTUAL, 1952 - 1962; PROJECTED, 1965, 1970, 1975. 1980

Category	1952		1953		1954		1955		1956		1957		1958		1959	
	Ratio	L.Q.	Ratio	L.Q.	Ratio	L.Q.	Ratio	L.Q.	Rati	L.Q.	Ratio	L.Q.	Ratio	L.Q.	Ratio	L.Q.
I. Agriculture																
% Utah	10.9	0.89	11.0	0.96	10.7	0.91	10.4	0.89	9.6	0.86	9.0	0.86	8.9	0.87	8.3	0.84
% U.S.	12.2		11 5		11.7		11.7		11.1		10.5		10.2		9.9	
II. Mining and Mineral Production																
% Utah	5.6	3.50	5 6	3.73	5.5	3.93	5.7	4.07	6.1	4.36	6.2	4.43	5.4	4.15	4.6	3.83
% U.S.	1.6		1.5		1.4		1.4		1.4		1.4		1.3		1.2	
III. Manufacturing																
% Utah	13 3	0.47	13.8	0.47	13.7	0.49	14.0	0.50	14.4	0.52	14.5	0.53	13.6	0.53	12.9	0.49
% U.S.	28.4		29.1		27.7		27.8		27.6		27.3		25.9		26.2	
IV. Defense																
% Utah	12.0	3.24	9.3	2.45	8.3	2.31	8.0	2.35	7.6	2.24	7 5	2.14	8.1	2.25	9.2	2.56
% U.S.	3.7		3.8		3.6		3.4		3.4		3.5		3.6		3.6	
V. Government																
% Utah	12 2	1.26	13.8	1.42	14.1	1.37	13.5	1.31	13.6	1.28	14.3	1.28	15.1	1.25	15.3	1.25
% U.S.	9.7		9.7		10.3		10.3		10.6		11.2		12.1		12.2	
VI. Construction																
% Utah	4.9	1.04	4.6	1.00	4.8	1.02	5.7	1.16	6 0	1 18	5.6	1.14	5.6	1.14	5.7	1.14
% U.S.	4.7		4.6		4.7		4.9		5.1		4.9		4.9		5.0	
VII. Transportation, Communication and Utilities																
% Utah	9.6	1.26	9.6	1.26	9.4	1.27	9.2	1.28	8 8	1.22	8.7	1.21	8.4	1.22	8.2	1.21
% U.S.	7.6		7.6		7.4		7.2		7.2		7.2		6.9		6.8	
VIII. Wholesale and Retail Trade																
% Utah	19.5	1.08	20.0	1.11	20 4	1.11	20.1	1.09	20.4	1.11	20.4	1.11	20.5	1.09	20.9	1.11
% U.S.	18.0		18.0		18.4		18.4		18.4		18.4		18.8		18.8	
XI. Finance, Insurance & Real Estate																
% Utah	3.0	0.81	3.2	0.84	3.5	0.88	3.7	0.90	3.7	0.90	3.7	0.88	3.8	0.86	3.9	0.89
% U.S.	3.7		3.8		4.0		4.1		4.1		4.2		4.4		4.4	
X. Services																
% Utah	8.9	0.86	9.1	0.88	9.6	0.89	9.7	0.89	9 3	0.88	10.1	0.89	10.6	0.89	11.0	0.92
% U.S.	10.3		10.3		10.8		10.9		11 1		11.4		11.9		12.0	

TABLE 6 (Cont'd)

COMPARISON OF THE RELATIVE IMPORTANCE OF INDUSTRIAL CATEGORIES IN UTAH WITH THE SAME CATEGORIES IN THE UNITED STATES (LOCATION QUOTIENTS)
ACTUAL, 1952-1962, PROJECTED, 1965, 1970, 1975, 1980

Category	1960		1961		1962		1965		1970		1975		1980	
	Ratio	L.Q.	Ratio	L.Q.	Ratio	L.Q.	Ratio	L.Q.	Ratio	L.Q.	Ratio	L.Q.	Ratio	L.Q.
I. Agriculture														
% Utah / % U.S.	7.8 / 9.6	0.81	7.2 / 9.2	0.78	7.0 / 8.6	0.81	6.2 / 8.1	0.77	5.0 / 6.9	0.73	4.2 / 5.9	0.71	3.6 / 5.1	0.71
II. Mining and Mineral Production														
% Utah / % U.S.	4.9 / 1.2	4.08	4.7 / 1.1	4.27	4.3 / 1.1	3.91	4.2 / 1.0	4.20	3.6 / 0.8	4.50	3.2 / 0.6	5.34	2.8 / 0.5	5.60
III. Manufacturing														
% Utah / % U.S.	13.2 / 26.1	0.51	12.9 / 25.5	0.51	12.6 / 25.8	0.49	12.6 / 24.8	0.51	12.0 / 23.4	0.51	11.7 / 22.2	0.53	11.2 / 21.2	0.53
IV. Defense														
% Utah / % U.S.	9.7 / 3.4	2.85	10.3 / 3.4	3.03	11.1 / 3.5	3.17	10.3 / 3.4	3.03	11.2 / 3.1	3.61	9.8 / 2.9	3.38	8.6 / 2.7	3.19
V. Government														
% Utah / % U.S.	15.5 / 12.6	1.23	16.1 / 13.2	1.22	16.1 / 13.6	1.18	17.0 / 14.6	1.16	18.4 / 16.4	1.12	20.1 / 17.5	1.15	21.9 / 17.9	1.22
VI. Construction														
% Utah / % U.S.	5.2 / 4.8	1.08	5.3 / 4.6	1.15	5.8 / 4.5	1.29	5.5 / 4.5	1.22	5.2 / 4.4	1.18	5.1 / 4.4	1.16	4.9 / 4.4	1.11
VII. Transportation, Communication and Utilities														
% Utah / % U.S.	7.8 / 6.7	1.16	7.5 / 6.6	1.14	7.1 / 6.5	1.09	6.8 / 6.2	1.10	5.9 / 5.7	1.04	5.2 / 5.3	0.98	4.5 / 4.9	0.92
VIII. Wholesale and Retail Trade														
% Utah / % U.S.	20.9 / 19.0	1.10	20.7 / 19.1	1.08	20.6 / 19.1	1.08	21.0 / 19.3	1.09	21.1 / 19.7	1.07	21.5 / 20.1	1.07	21.7 / 20.5	1.06
IX. Finance, Insurance & Real Estate														
% Utah / % U.S.	4.0 / 4.5	0.89	3.9 / 4.6	0.85	3.9 / 4.6	0.85	4.3 / 4.9	0.88	4.6 / 4.9	0.94	5.0 / 5.9	0.85	5.3 / 6.5	0.82
X. Services														
% Utah / % U.S.	11.1 / 12.3	0.92	11.4 / 12.6	0.90	11.4 / 12.8	0.89	12.1 / 13.3	0.91	13.0 / 13.3	0.98	14.3 / 15.2	0.94	15.5 / 16.3	0.95

Source: Percentages from Table 4.

Hence, the percentage of workers employed in the local area was 1.82 times the percentage employed in Utah. The last statement implies that the concentration of workers in Services in the Provo area was much higher than in the State as a whole.

Table 6, entitled COMPARISON OF THE RELATIVE IMPORTANCE OF INDUSTRIAL CATEGORIES IN UTAH WITH THE SAME CATEGORIES IN THE UNITED STATES (LOCATION QUOTIENT) ACTUAL 1952-1962; PROJECTED 1965, 1970, 1975 and 1980, may be interpreted in the same fashion.

The next step in the analysis of the basic data was to examine the changes which occurred over a period of time. The first approach was to compute the annual percentage change for each category for each level of government. The percentage changes were computed by taking the given year as a percentage of the preceding year. The average of the percentage changes was then determined. These results are given in Table 7 under the column headings 1952-1953, 1953-1954, etc. The column headed N-10 is the average of the percentage changes.

As previously mentioned, both the post-Korean adjustment and the 1957 recession affected many of the series dealt with in the present study; for this reason it was decided to test the averages by eliminating the widest deviations which occurred. So the average percentage changes were calculated first, by removing the deviation in the annual observations which departed by the greatest percentage amount from the average (Table 7 column headed N-9), and second, by removing the two annual observations departing by the greatest percentage amount from the annual average (Table 7 column headed N-8).

TABLE 7

ANNUAL PERCENTAGE CHANGES IN EMPLOYMENT OF CLASSIFIED WORKERS BY MAJOR CATEGORIES, 1952 to 1962

	Category	1952-1953	1953-1954	1954-1955	1955-1956	1956-1957	1957-1958	1958-1959	1959-1960	1960-1961	1961-1962	Average N=10[a]	Average N=9[b]	Average N=8[c]	1952-1962[d]
							Provo Metropolitan Area								
I.	Agriculture	- 2.1	- 5.4	2.1	1.1	- 9.5	- 1.0	- 4.0	- 2.6	- 5.4	3.0	- 2.4	- 1.6	- 2.2	- 2.5
II.	Mining and Mineral Production	6.4	2.9	16.8	10.4	- 2.9	- 6.7	-21.6	23.5	24.0	- 9.3	4.4	7.2	5.1	3.3
III.	Manufacturing	14.0	- 8.1	17.1	5.4	1.1	-13.1	- 9.7	10.4	- 3.2	- 5.8	8.1	2.4	3.9	0.3
IV.	Defense[e]	--	--	--	f	300.0	-75.0	-100.0	f	-50.0	200.0	27.5	5.3	- 2.8	--
V.	Government	6.2	7.0	5.5	7.5	4.0	4.5	- 0.7	12.4	2.8	3.0	5.2	4.4	5.1	5.2
VI.	Construction	0.3	-10.8	27.8	34.6	- 4.0	-32.8	6.9	13.8	-15.1	27.6	4.8	9.0	5.8	2.7
VII.	Transportation, Communication and Utilities	7.4	- 4.9	8.3	-10.4	- 4.7	4.4	- 4.4	- 3.4	- 5.6	0.9	- 1.2	0.2	1.2	- 1.4
VIII.	Wholesale and Retail Trade	1.5	- 1.1	5.3	7.8	3.9	0.2	3.5	1.7	- 2.5	2.4	2.3	1.7	2.2	2.2
IX.	Finance, Insurance and Real Estate	3.7	9.5	27.4	8.8	- 2.5	2.8	5.7	0.8	- 3.4	4.9	5.8	3.4	4.2	5.5
X	Services	8.5	14.6	10.2	9.5	15.1	6.6	11.5	8.2	5.1	5.8	9.5*	8.9*	8.2*	9.5*
	Total Classified Employees	6.6	- 1.8	11.0	7.0	1.9	- 4.7	- 0.7	6.9	- 1.4	2.1	3.0	1.8	2.6	2.6
										* Education		10.9	10.0	9.1	10.8
										* Other Services		8.0	7.2	6.5	7.9
							State of Utah								
I.	Agriculture	2 3	- 5.2	2.1	- 4.0	- 4.6	- 1.4	- 3.0	- 2.7	- 5.2	2.3	- 1.9	- 2.4	- 3.0	- 2.0
II.	Mining and Mineral Production	1.3	- 4.0	9.9	9.7	3.5	-13.0	-10.2	9.1	- 0.6	- 4.7	1.0	1.6	3.0	- 0.3
III.	Manufacturing	5.0	- 3.6	7.8	6.3	2.7	- 5.9	- 1.8	6.1	0.6	2.9	2.0	2.9	2.3	1.9
IV.	Defense	-21.7	-12.8	1.7	- 1.1	- 0.5	8.2	18.5	9.2	9.4	12.7	2.4	5.0	3.4	1.7
V.	Government	14.4	- 1.0	1.2	4.1	7.2	5.4	5.4	5.4	6.6	4.8	5.4	4.3	5.0	5.3
VI.	Construction	- 4.9	1.5	25.7	9.2	- 4.9	0.4	5.6	- 5.5	4.8	14.3	4.6	2.3	0.8	4.2
VII.	Transportation, Communication and Utilities	1.7	- 4.3	2.5	- 0.2	0.9	- 3.4	0.3	- 1.0	- 1.0	- 0.0	- 0.4	- 0.02	0.4	- 0.5
VIII.	Wholesale and Retail Trade	3.7	- 0.6	3.8	5.1	2.3	0.3	5.8	3.9	1.6	4.7	3.1	3.5	3.9	3.1
IX.	Finance, Insurance and Real Estate	7.4	7.1	11.4	3.4	2.2	4.3	6.3	4.7	2.3	4.2	5.3	4.7	5.0	5.3
X.	Services	3.5	2.5	6.4	4.8	5.5	4.0	8.7	4.8	4.8	5.6	5.1	4.7	4.9	5.1
	Total Classified Employees	1.4	- 2.8	5.3	3.6	1.9	- 0.0	4.0	3.8	2.7	4.9	2.5	3.1	2.8	2.5
							United States								
I.	Agriculture	- 3.5	- 0.9	3.4	- 2.2	- 5.3	- 6.1	0.3	- 2.4	- 4.5	- 5.0	- 2.6	- 3.3	- 2.9	- 2.7
II.	Mining and Mineral Production	- 3.6	- 8.7	0.1	3.8	0.7	- 9.3	- 2.7	- 3.0	- 6.0	- 2.9	- 3.5	- 3.9	- 3.3	- 3.2
III.	Manufacturing	4.7	- 7.0	4.0	1.8	- 0.8	- 8.1	4.6	1.0	- 3.2	2.7	- 0.3	0.9	1.8	- 0.1
IV.	Defense	5.6	- 8.7	- 2.2	4.1	1.7	1.2	1.8	- 3.8	0.7	4.3	0.5	1.5	1.0	0.4
V.	Government	1.9	3.8	2.8	6.1	6.0	4.7	4.2	4.9	4.0	4.3	4.3	4.5	4.3	4.3
VI.	Construction	- 0.4	- 0.4	7.3	7.0	- 2.5	- 5.0	6.4	- 2.5	- 4.2	- 2.3	0.3	- 0.4	- 1.4	0.2
VII.	Transportation, Communication and Utilities	1.0	- 4.8	1.4	2.5	- 0.1	- 6.2	0.9	0.2	- 2.3	0.0	- 0.8	- 0.2	0.4	- 0.8
VIII.	Wholesale and Retail Trade	- 2.4	- 0.1	2.9	3.1	0.3	- 1.2	3.5	2.6	- 0.4	1.8	1.0	0.7	1.1	1.5
IX.	Finance, Insurance and Real Estate	3.7	4.1	4.5	4.0	2.0	1.7	3.1	3.4	2.4	1.6	3.0	2.9	3.0	2.8
X.	Services	2.4	2.3	4.5	4.2	3.3	0.9	4.3	3.6	2.1	3.2	3.1	3.3	3.2	3.1
	Total Classified Employees	2.1	- 2.2	3.4	2.8	0.2	- 3.1	3.4	1.0	- 0.9	1.6	0.8	1.7	0.2	0.8

[a] N = 10, average of the annual percentage changes.

[b] N = 9, average of the annual percentage changes less the greatest derivative from the mean.

[c] N = 8, average of the annual percentage changes less the two greatest derivatives from the mean.

[d] Compound growth rate, 1952-1962.

[e] Actual figures are so small that percentages are meaningless.

[f] Increase from zero.

Source: Tables 1, 2, and 3.

One of the ambiguities which arises in examining growth rates based on past experience is that they can be badly distorted by the selection of the initial or the terminal year. For example, 1953, a Korean War year, was a year of full employment; 1958, a recession year, had registered declines in most employment categories. The per annum growth rate computed for 1953-58 indicates no changes or declines for the five-year period.

For these reasons it was decided to examine the growth rates for every category for the Provo Metropolitan Area, Utah, and the United States from each year to every other year. The results are contained in Appendix I. For example, find Category I--Agriculture, in the Provo Metropolitan Area; the initial year may be selected by reading down the column headed "Year From" and the terminal date by reading across the selected row. Thus, the annual rate of growth from 1952 to 1958 is -2.7 per cent. The mean ($\bar{X}$) for the 55 observations in each category was computed. Another mean ($\bar{X}^*$) was computed by eliminating extreme observations which were visually identified.

For convenience of reference, the growth rate for 1952-1962 for each category has been included in Table 7.

It is difficult through an examination of the percentage data to develop a clear idea of the relative importance of the major industry classification. Relative importance is a necessary datum in developing an adequate picture of an economy. In the case of the present study, which is predicated on the stability of the economic patterns as observed in the past, it is necessary to explain in terms of exogeneous factors any shift in the relative importance of an industry group which occurs during the period of projection.

One way of approaching the problem of relative importance is through the use of modified Diversification Index (DI). An analysis of the data which are summarized by the DI will also indicate the extent to which an economy is becoming more (or less) concentrated. The DI is constructed as follows: For each year and for each level of government the major industry classifications are arrayed in the order of percentage importance from highest to lowest. The percentage of employment for each category is then cumulated. The DI is computed by subtracting 550 from the cumulated total and dividing by 450. These constants were used so that the results could be transformed onto a scale reading from 0 to 100. The DI is given in percentage terms. An example of the calculation of a DI for the Provo Metropolitan Area for 1962 follows:

III.	Manufacturing	25.1	25.1
X.	Services	20.8	45.9
VIII.	Wholesale & Retail Trade	16.8	62.7
V.	Government	16.6	79.3
I.	Agriculture	8.2	87.2
VI.	Construction	5.7	93.2
VII.	Transportation, Communication & Utilities	4.1	97.3
IX.	Finance, Insurance & Real Estate	2.2	99.5
II.	Mining and Mineral Production	0.5	100.0
IV.	Defense	0.0	100.0
	Total		790.5

$$DI = \frac{790.5 - 550.0}{450.0} = 53.44$$

A DI = 0 is to be interpreted as a situation in which each of the major industry classifications has the same percentage of total employment. It is used as a benchmark for complete diversification. A DI = 100 will occur if all of the employment is concentrated in one major

industry classification. Such a case may be interpreted as the absence of diversification. The range between 0 and 100 gives some indication of the degree to which the economy is diversified (or, alternatively, concentrated). No particular significance may be attributed to any given index; the trend of the index over time indicates the tendency toward greater or less diversification from an initial date. Table 8 provides a schedule of the diversification indexes for each level of government by year. It includes the DI's for the projected periods computed from employment extrapolations.

It may be noted by way of comparison that the Provo Metropolitan Area is more concentrated than the United States and much more concentrated than Utah. There are two reasons for this: (1) the amount of employment in Manufacturing, especially primary metals industries; and (2) the lack of importance of the four smallest categories--Transportation, Communication and Utilities; Finance, Insurance and Real Estate; Mining and Mineral Production; and Defense--which together account for only 6.8 per cent of total employment in 1962. The computations for the DI's are given in Appendix II.[1]

There is another important use which can be made of the raw data from which the DI's are calculated. It is possible to observe the tendency toward concentration within any given number of major industry groups. For example, it will be observed from an examination of the cumulative arrays in Table 9 for the three levels of government that the largest five major industry groups

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[1]It should be noted that the DI's developed for the present study are not comparable with the DI's of the preceding studies in this series because of a change in employment categories.

TABLE 8

DIVERSIFICATION INDEXES

Year	Provo Metropolitan Area	Utah	United States
1952	54.04	27.76	44.62
1953	55.33	29.18	44.93
1954	54.04	29.51	44.44
1955	54.09	28.04	44.76
1956	53.84	28.22	44.13
1957	55.02	29.02	43.96
1958	54.20	29.58	43.40
1959	53.44	30.36	43.96
1960	54.20	30.87	44.60
1961	55.07	31.60	44.22
1962	53.44	31.44	44.98
1965	54.49	33.00	44.91
1970	56.20	35.52	45.24
1975	58.20	38.90	45.55
1980	59.38	41.78	45.78

Source: Appendix I.

TABLE 9

CUMULATIVE PERCENTAGE OF CLASSIFIED EMPLOYMENT IN THE FIVE LARGEST CATEGORIES--PROVO METROPOLITAN AREA, UTAH AND THE UNITED STATES--ACTUAL 1952-1962; PROJECTED 1965, 1970, 1975 and 1980

Year	Provo Metropolitan Area	Utah	United States
1952	86.0	67.9	78.6
1953	86.5	68.2	78.6
1954	86.9	68.5	78.9
1955	85.9	67.7	79.1
1956	85.4	67.8	78.8
1957	86.3	68.3	78.8
1958	87.6	68.7	78.9
1959	87.5	69.3	79.1
1960	87.6	70.3	79.6
1961	88.6	71.4	79.6
1962	87.5	71.8	79.9
1965	88.3	73.0	80.1
1970	88.7	75.7	80.6
1975	89.6	77.4	80.9
1980	90.3	78.9	82.3

Source: Appendix I.

accounted for two-thirds to nearly nine-tenths of total classified employment. Again it may be noted that this percentage is substantially higher for the Provo Metropolitan Area than for Utah and the United States.

One technique was used to analyze the implication of the employment data for the base period, 1952-1962, which was especially fruitful in indicating underlying consistency of the data. In Tables 10 through 15 the major industry classifications are ranked in order of importance. The data are presented in two different ways. Tables 10, 11, and 12, entitled INDUSTRY CATEGORIES AS A PER CENT OF TOTAL CLASSIFIED EMPLOYMENT IN DESCENDING ORDER OF IMPORTANCE, give the industry classification in the body of the table by year by ranked order of importance. Thus in Table 10, Manufacturing (Category III) is first in importance for the base period but is replaced by Services (Category X) in the last three of the projected years in the Provo Metropolitan Area. For the United States, (Table 12), Manufacturing also ranks first both in the base period and in all of the projected years. In contrast to the situation in Provo and the United States, Wholesale and Retail Trade (Category VIII) ranks first in Utah in all years of the base period and in three of the four projected years (Table 11).

The same data are presented in an alternative form in Tables 13, 14 and 15, entitled THE ORDER OF RANK AS A PER CENT OF TOTAL CLASSIFIED EMPLOYMENT FOR MAJOR INDUSTRY CLASSIFICATIONS. For these tables, the classifications are listed from I through X. Thus it may be observed, for example, that in Utah, Agriculture (Category I) varied between fourth and fifth in importance between 1952 and 1958, dropping to seventh place by 1962, and is projected to decline to ninth in importance by 1980.

TABLE 10

INDUSTRY CATEGORIES AS A PER CENT OF TOTAL CLASSIFIED EMPLOYMENT IN THE PROVO METROPOLITAN AREA IN DESCENDING ORDER OF IMPORTANCE

Rank	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1965	1970	1975	1980
1	III	III	III	III	III	III	III	III	III	III	III	III	X	X	X
2	VIII	VIII	VIII	VIII	VIII	VIII	VIII	X	X	X	X	X	III	V	V
3	I	V	V	V	V	X	X	VIII	VIII	VIII	VIII	V	V	III	III
4	V	I	X	X	X	V	V	V	V	V	V	VIII	VIII	VIII	VIII
5	X	X	I	I	I	I	I	I	I	I	I	I	I	VI	VI
6	VII	VII	VII	VII	VI	VI	VII	VI	VI	VI	VI	VI	VI	I	IX
7	VI	VI	VI	VI	VII	VII	VI	VII	VII	VII	VII	VII	VII	VII	I
8	IX	IX	IX	IX	IX	IX	IX	IX	IX	IX	IX	IX	IX	IX	VII
9	II	II	II	II	II	II	II	II	II	II	II	II	II	II	II
10	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV

Source: Table 4.

TABLE 11

INDUSTRY CATEGORIES AS A PER CENT OF TOTAL CLASSIFIED EMPLOYMENT IN THE STATE OF UTAH IN DESCENDING ORDER OF IMPORTANCE

Rank	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1965	1970	1975	1980
1	VIII	VIII	VIII	VIII	VIII	VIII	VIII	VIII	VIII	VIII	VIII	VIII	VIII	VIII	V
2	III	III	V	III	III	III	V	V	V	V	V	V	V	V	VIII
3	V	V	III	V	V	V	III	III	III	III	III	III	X	X	X
4	IV	I	I	I	X	X	X	X	X	X	X	X	III	III	III
5	I	VII	X	X	I	I	I	IV	IV	IV	IV	IV	IV	IV	IV
6	VII	IV	VII	VII	VII	VII	VII	I	VII	VII	VII	VII	VII	VII	IX
7	X	X	IV	IV	IV	IV	IV	VII	I	I	I	I	VI	VI	VI
8	II	II	II	II	II	II	VI	VI	VI	VI	VI	VI	I	IX	VII
9	VI	VI	VI	VI	VI	VI	II	II	II	II	II	IX	IX	I	I
10	IX	IX	IX	IX	IX	IX	IX	IX	IX	IX	IX	II	II	II	II

Source: Table 4.

TABLE 12

INDUSTRY CATEGORIES AS A 'E' .ENT OF TOTAL CLASSIFIED EMPLOYMENT IN THE UNITED STATES
IN DESCENDING ORDER OF IMPORTANCE

Rank	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1965	1970	1975	980
1	III	III	III	III	III	III	III	III	III	III	III	III	III	III	III
2	VIII	VIII	VIII	VIII	VIII	VIII	VIII	VIII	VIII	VIII	VIII	VIII	VIII	VIII	VII
3	I	I	I	I	I	X	V	V	V	V	V	V	V	V	V
4	X	X	X	X	X	V	X	X	X	X	X	X	X	X	X
5	V	V	V	V	V	I	I	I	I	I	I	I	I	I	IX
6	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII	VII	X	I
7	VI	VI	VI	VI	VI	VI	VI	VI	VI	VI	IX	IX	IX	VII	VII
8	IX	IX	IX	IX	IX	IX	IX	IX	IX	IX	VI	VI	VI	VI	VI
9	IV	IV	IV	IV	IV	V	IV	IV	IV	IV	IV	IV	IV	V	IV
10	II	II	II	II	II	II	II	II	II	II	II	II	II	II	II

Source: Table 4.

TABLE 13

ORDER OF RANK OF INDUSTRY CATEGORIES AS A PER CENT OF TOTAL
CLASSIFIED EMPLOYMENT N THE PROVO METROPOLITAN AREA

Classi-fication	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1965	1970	1975	1980
I	3	4	5	5	5	5	5	5	5	5	5	5	5	6	7
II	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
III	1	1	1	1	1	1	1	1	1	1	1	1	2	3	3
IV	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
V	4	3	3	3	3	4	4	4	4	4	4	3	3	2	2
VI	7	7	7	7	6	6	7	6	6	6	6	6	6	5	5
VII	6	6	6	6	7	7	6	7	7	7	7	7	7	7	8
VIII	2	2	2	2	2	2		3	3	3	3	4	4	4	4
IX	8	8	8	8	8	8	8	8	8	8	8	8	8	8	6
X	5	5	4	4	4	3	3	2	2	2	2	2	1	1	1

Source: Table 4.

TABLE 14

ORDER OF RANK OF INDUSTRY CATEGORIES AS A PER CENT OF TOTAL CLASSIFIED EMPLOYMENT IN THE STATE OF UTAH

Classification	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1965	1970	1975	1980
I	5	4	4	4	5	5	5	6	7	7	7	7	8	9	9
II	8	8	8	8	8	8	9	9	9	9	9	10	10	10	10
III	2	2	3	2	2	2	3	3	3	3	3	3	4	4	4
IV	4	6	7	7	7	7	7	5	5	5	5	5	5	5	5
V	3	3	2	3	3	3	2	2	2	2	2	2	2	2	1
VI	9	9	9	9	9	9	8	8	8	8	8	8	7	7	7
VII	6	5	6	6	6	6	6	7	6	6	6	6	6	6	8
VIII	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
IX	10	10	10	10	10	10	10	10	10	10	10	9	9	8	6
X	7	7	5	5	4	4	4	4	4	4	4	4	3	3	3

Source: Table 4.

TABLE 15

ORDER OF RANK OF INDUSTRY CATEGORIES AS A PER CENT OF TOTAL CLASSIFIED EMPLOYMENT IN THE UNITED STATES

Classification	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1965	1970	1975	1980
I	3	3	3	3	3	5	5	5	5	5	5	5	5	5	6
II	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
III	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
IV	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
V	5	5	5	5	5	4	3	3	3	3	3	3	3	3	3
VI	7	7	7	7	7	7	7	7	7	7	8	8	8	8	8
VII	6	6	6	6	6	6	6	6	6	6	6	6	6	7	7
VIII	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
IX	8	8	8	8	8	8	8	8	8	8	7	7	7	6	5
X	4	4	4	4	4	3	4	4	4	4	4	4	4	4	4

Source: Table 4.

Observation of the rankings will reveal a high degree of consistency both for the base period and the projections, movements of more than one position being somewhat unusual. An indirect indication of the stability of the base period was obtained by computing Kendall's Coefficient of Concordance, W, and the chi^2 for each of the coefficients. They are as follows:

	W	Chi^2
Provo Metropolitan Area	.9681	95.84
Utah	.9399	93.05
United States	.9740	96.43

The interpretation of these results is that a continuous cause system was operating during this base period and the probability of the ordering having strong random elements is negligible.

Transition to Labor Force and Population

All of the above analysis applies only to the classified workers. Although these ten categories include the bulk of the workers, some 15 to 23 per cent of civilian labor force is not included. Groups not included are the self-employed and unpaid family workers, private household workers, unemployed, and, in the Provo Metropolitan Area and Utah, those workers involved in labor disputes. The numbers of workers in these groups are shown in the bottom rows of Tables 1, 2 and 3.

In addition, the number of classified workers really represents the number of jobs and not the number of workers inasmuch as some workers have more than one job and thus are counted twice. Likewise, the estimation of the number of

workers in the various industrial categories is likely to produce some discrepancy between the totals derived by a summation of the various groups and the estimated total civilian labor force. The net adjustment figures for these two factors are given in Tables 1, 2 and 3.

The algebraic sum of the nonclassified groups and the net adjustment figures added to the total classified workers yields the estimated number of workers that make up the civilian labor force which is shown on the last row of Tables 1, 2 and 3.

Relating total civilian labor force to civilian population was the final step in the analysis of the three levels of government in the postwar period. These relationships are shown in Table 16 for each year of the period 1950 to 1962 for Utah and the United States and for the two census years only for the Provo Metropolitan Area. Satisfactory intercensus estimates of population for the latter area were not available.

In Table 16, the labor force-population relationship is stated in two forms. In the fourth column is given the ratio of the civilian labor force to the estimated civilian population, while in the last column the multiplier relationship between the two sets of data is given. There is a reciprocal relationship, of course, between the two measures. As the ratio of labor force to population declines, the population multiplier increases. For the United States it is noted that there is steady increase in the multiplier from 2.38 in 1950 to 2.56 in 1962. As might be expected, the multiplier for Utah is somewhat higher than for the Nation; also, it increased only very slightly over the decade averaging 2.62 in the early 1950's and 2.70 in the early 1960's.

TABLE 16

RELATIONSHIP OF CIVILIAN POPULATION TO CIVILIAN LABOR FORCE, PROVO METROPOLITAN AREA, UTAH AND UNITED STATES
1950 to 1962

Year	Total Civilian Population[a]	Total Civilian Labor Force	Ratio of Labor Force to Population	Population Multiplier
	(000)	United States[b] (000)		
1950	150,202	63,099	42.0	2.38
1951	151,082	62,884	41.6	2.40
1952	153,366	62,966	41.1	2.43
1953	156,047	63,815	40.9	2.44
1954	159,086	64,468	40.5	2.47
1955	162,305	65,848	40.6	2.46
1956	165,341	67,530	40.8	2.45
1957	168,370	67,946	40.4	2.48
1958	171,426	68,647	40.0	2.50
1959	175,277	69,695	39.8	2.51
1960	178,144	70,612	39.6	2.52
1961	181,193	71,603	39.5	2.53
1962	183,736	71,853	39.1	2.56
		State of Utah		
1950	692,000	259,800	37.5	2.67
1951	704,000	272,400	38.7	2.58
1952	726,000	279,000	38.4	2.60
1953	746,000	282,000	37.8	2.65
1954	757,000	278,200	36.8	2.72
1955	793,000	291,200	36.7	2.72
1956	820,000	297,100	36.2	2.76
1957	834,000	303,400	36.4	2.75
1958	852,000	311,100	36.5	2.74
1959	874,000	324,500	37.1	2.70
1960	897,000	333,200	37.1	2.69
1961	935,000	344,500	36.8	2.71
1962	963,000	356,800	37.1	2.70
		Provo Metropolitan Area		
1950	81,912	26,089	34.1	2.93
1960	106,991	33,371	34.5	2.90

[a]As of July 1 for Utah and United States, as of April 1 for Provo Metropolitan Area.

[b]Includes Alaska and Hawaii beginning 1959.

Source: Population--U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 229, May 22, 1961; No. 258, November 21, 1962; No. 259, November 26, 1962; and No. 268, June 17, 1963: Labor Force--Tables 1, 2 and 3 of this report.

Although a population multiplier for the Provo Metropolitan Area could be determined only for the beginning and ending of the decade, it was considerably higher than that of either the United States or Utah. In 1950 it was found to be 2.93 and in 1960, 2.90.[2] Population multipliers for other years of the decade could not be determined because of the fact that population estimates are not made on a county basis by the United States Census Bureau for intercensus years. Estimates were made by a special state-local committee, the Utah Population Work Committee, for a couple of these years; but it was believed that these might not be strictly comparable to the U. S. Census Bureau data.

These labor force-population relationships provide the basis for the population projections in Section IV after the number of classified workers has been determined for 1965, 1970, 1975 and 1980.

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[2]In computing the ratio of labor force to population and the population multiplier, the civilian population of the Provo Metropolitan Area was reduced by the estimated number of students at Brigham Young University in 1950 and 1960.

SECTION III

INDUSTRY EMPLOYMENT PROJECTIONS

General Comments on the Economic Pattern, 1952-1962

During the base period analyzed for extrapolation purposes, the trend indicators showed increasing employment for all three levels of government. However, there were significant differences among them. The State of Utah, strongly influenced by the Salt Lake Metropolitan Area, expanded more rapidly than the United States. The following summary table permits a direct comparison of the three levels of government at the beginning and at the end of the period.

	Classified Employment			Growth Rate	
	1952	1954	1962	1952 1962	1954 1962
Provo Metropolitan Area	21,436	22,458	27,676	2.6	2.6
Utah	241,571	238,188	308,108	2.5	3.2
United States	55,616 (000's)	55,517 (000's)	60,575 (000's)	0.8	1.1

The Provo Metropolitan Area did not show the same responsiveness to the post-Korean readjustment as did the State or the Nation. This is largely attributable to a continued expansion of employment in primary metals industries, Services, and Government. If the period from 1952 to 1962 is taken as the base, expansion in the Provo area occurred at roughly the same rate as for Utah. However, if the period 1954-1962 is taken, to avoid the Korean readjustment, then it appears that Provo has grown less rapidly than the State. The Nation shows a rate of growth well below the other two levels.

For the period from 1957-1962 employment has been fairly constant with

the exception of the decline caused by the impact of the recession in 1958. It might also be noted that from 1958 to 1962 the level of unemployment has ranged from 6.6 to 8.7 per cent of the labor force, a figure well above the state and national averages. This unemployment has in large measure been attributable to the decline in primary metals employment from 6,719 in 1957 to 4,943 in 1962.

Virtually all of the increase in employment was accounted for by the expansion of Services, Government, and Wholesale and Retail Trades. Other categories showed increases of negligible magnitudes or declines. Within the Services category, educational services was the dynamic factor as will be discussed below.

One factor affecting the growth trend for all three levels of government was the 1957-1958 recession, with the impact on the Provo area being much sharper than in the State or Nation. This impact was attributable to the decline in employment in primary metals which strengthens the impression of Provo dependancy on that industry.

Except for the post-Korean adjustment and the 1957-1958 recession, the series for all three governmental levels showed considerable over-all regularity; this leads to the conclusion that trends established during the base period could be considered as representative of "normal" periods of growth, "normal" implying the absence of any exogeneous development, a recession, a substantial modification of defense activity, the closing down of a major industry, or an important innovation or discovery leading to a rapidly increasing rate of growth.

For Utah, the categories noticeably below average growth were Agriculture; Mining and Mineral Production; and Transportation, Communication and Utilities. In general these lower rates of growth reflected the declining importance of the extractive sector of the economy as well as the technological revolution

in transportation which has affected the Nation. Significantly faster than average growth rates were noted in Government, Wholesale and Retail Trade, Finance, Insurance and Real Estate, and Services. The increase in the last three of these categories represented the increasing importance of the Salt Lake Metropolitan Area as a regional entrepôt--Salt Lake being such a large part of the total that it affects the result of the State.

The pattern for the United States paralleled that for Utah. The same categories--Agriculture; Mining and Mineral Production; and Transportation, Communication and Utilities were significantly below the over-all growth rate. In addition, the experience in Manufacturing was below the average, probably because of the steady trend towards the displacement of labor due to automation. The categories significantly above the over-all trend are the same for the United States as for Utah.

An analysis of the location quotients is useful in providing a picture of what is happening to the Provo Metropolitan Area as compared with the State, and of what is happening to the State as compared with the United States. However, location quotients are sensitive to cyclical fluctuation, and the leads or lags in the dispersion of cyclical fluctuations to the various parts of the country make the location quotients appear unstable over short periods of time. Ignoring both the smaller variation in the location quotients and those changes which show no appreciable regularity, there was reasonable stability in the location quotients for the Provo Metropolitan Area indicating that quite generally the industrial pattern in this area is not changing in relation to the State of Utah.

There were two exceptions: (1) the Manufacturing location quotient tended downward reflecting the deteriorating position of primary metals; and (2) the Services location quotient showed an upward trend reflecting the growth in educational services.

The location quotients indicate a relatively greater concentration in Mining and Mineral Production and Defense in Utah than in the United States. On the other hand, Manufacturing employment in Utah is strikingly lower than in the Nation as a percentage of the total.

Within each level of government, an analysis of the shifts in the ranking of industry groups has also indicated a high degree of stability. As indicated above, Kendall's coefficient of concordance in excess of .94 was obtained for all three levels. There was an unusually large degree of stability in the ranking of industrial categories in the Provo Metropolitan Area. Eight out of the ten categories did not change or changed by only one rank position through the base period of 1952 to 1962. Only one category, Services, moved as much as three ranks--from fifth to second--reflecting the growing importance of educational services. The only other significant rank change was the decline in Agriculture from third to fifth place.

In Utah significant changes in rank were registered by Agriculture, which declined from fourth place in 1953 to seventh place by 1962, and in Services, which improved from seventh place in 1952 to fourth place in 1962. Not surprisingly, Defense has experienced considerable instability.

For the United States only two categories have shifted as much as two positions: Agriculture, which has declined from third position to fifth position, and

Government, which has moved up from fifth position to third position largely because of the increase in state and local government employment.

This section will conclude with the general observation that the period used as a basis for extrapolation, particularly the years after the post-Korean adjustment (1954 to 1962), has been one in which meaningful patterns were established. If the assumptions made with respect to defense activities are reasonably close to actuality, the writers conclude that there is no reason adherent in the data for the eleven years of 1952 to 1962 to believe that there will be major changes in the pattern in the foreseeable future. Omitting defense, all of the suggestions coming to the attention of the writers as to major innovations which might affect the prevailing pattern seem to be highly speculative and provide no basis for expecting important alterations in the observed trends. The minor exceptions to these general observations will be noted in the following section, which is concerned with the analysis of the rates used in the extrapolation of the individual employment categories.

Growth Rates for Estimating Classified Employees

In this section reasons will be discussed which lead to the selection of growth rates used to project employment by major industry classifications developed for this study. In general, principal reliance was placed on the information developed with respect to the base period of 1952 to 1962--in effect projecting the patterns which characterized this period. Exceptions were made, however, in those cases where general knowledge of an industry category led the writers to believe that something different would develop than indicated by past experience.

The data being used are, it may be observed, of a rough nature; and the time period involved is not long enough to make use of techniques which would give more precise answers. Therefore, in an attempt to avoid spurious accuracy the growth rates used were rounded to the nearest 0.5 per cent.

A number of the growth rates developed in this section will differ from those of the previous studies in this series. There are three reasons for this difference: the use of the new S.I.C. code resulted in shifts among the various categories; a different method of setting up major industry categories was developed; and two more years' experience was available.

I. Agriculture

Provo Metropolitan Area--Growth Rate: -2.0 per cent to 1965; -1.5 per cent to 1970; -1.0 per cent in 1975; -1.0 per cent to 1980.

Employment in Agriculture declined during the eleven-year base period from 2,897 to 2,263, a rate of decrease of 2.5 per cent. The average annual change was -2.4 per cent; but when the widest and next widest deviations from the mean were eliminated, the results were -1.6 and -2.2 per cent respectively. The decline in Agriculture in the Provo Metropolitan Area reflects the general decline in agricultural employment throughout Utah as well as the transfer of some prime agricultural land to urban uses. Every statistic examined indicates that this decline has occurred throughout the base period. For example, the mean of the growth rates computed from each year to every other year is -2.80 per cent.

It is not felt, however, that this decline will continue as rapidly in the future as it has in the past. An important offsetting factor is the increase in

population along the Wasatch Front plus the potential future stabilization of export crops. In view of this, it is felt that the absolute rate of decline will continue in the Provo Metropolitan Area but at a decreasing rate.

Utah--Growth Rate: -2.0 per cent to 1965; -1.5 per cent to 1970; -1.0 per cent to 1975; 0.0 per cent to 1980.

Employment in Agriculture in Utah declined from 26,278 in 1952 to 21,500 in 1962, a rate of decrease of 2.0 per cent. The average percentage change was -1.9 per cent; and when the widest and next widest deviations from the mean were eliminated, the rates became respectively -2.4 and -3.0 per cent. A rate of decrease of 2.0 per cent seems most representative of what occurred during the base period. However, it is felt that the argument which justifies a declining rate of decrease in the case of the Provo Metropolitan Area applies equally well to the State of Utah. It is assumed that until 1965 the base period representative rate of decrease will probably continue but, after that, the rate will decline until agricultural employment becomes stabilized by the end of the period of projection.

United States--Growth Rate: -1.5 per cent

Agricultural employment in the United States declined from 6,792,000 in 1952 to 5,190,000 in 1962, a decline which was reversed during only one year (1954-1955). The rate of decrease during the period was 2.7 per cent. The average annual change was -2.6 per cent; and when the widest and next widest deviations from the mean were eliminated, the percentage changes were respectively -3.3 and -2.9 per cent. The reasons for the decline in agricultural employment in the United States are well known: improvements

in technology, the shift to large-scale operation, improved crop and livestock management, and improved fertilizers and pesticides. There has also been a decline in the total number of farms and in the amount of land under cultivation, as a result of the foregoing factors. These declines occurred in the face of an increase of output. However, the anticipated future increase in population should be a major offsetting factor to the continuation of the very rapid rate of decline observed during all of the base period. It was decided therefore to project the employment decrease at a lower rate than that observed during the base period.

II. Mining and Mineral Production

Provo Metropolitan Area--Growth Rate: 0.0 per cent.

Employment in mining in the Provo Metropolitan Area has been negligible -- varying from 98 in 1952 to 136 in 1962. Most of the employment is in the quarrying of non-metallic minerals. In terms of present knowledge about the mineral potentials of the Provo Metropolitan Area, there is no reason to suspect any future increase of a magnitude which should be considered in this study.

Utah--Growth Rate: 0.0 per cent

Employment in Mining and Mineral Production in Utah increased from 13,529 in 1952 to 16,257 in 1957 but then declined steadily to 13,113 in 1962--a decrease from 1952 of 416 or 0.3 per cent. The average annual change was 1.0 per cent; but when the widest and the next widest deviations from the mean were eliminated, the results were 1.6 and 3.0 per cent respectively.

Of the categories composing Mining and Mineral Production, the most important (in order of magnitude of employment) are copper ores, crude petroleum and natural gas, uranium, lead and zinc. In the last few years employment in

copper and crude petroleum and natural gas seem relatively stable. However, other categories making up the industry group have been steadily declining. What might counteract an over-all tendency for declining employment in this category is the existence of a number of mineral resources in the State which have not as yet been exploited but whose exploitation is in the planning stage. There is every reason to believe they will be developed in the near future. Weighing this possibility against the downward employment trend in the category during recent years, it is believed that employment will remain relatively stable during the period of the forecast.

United States--Growth Rate: -2.5 per cent

Employment in Mining and Mineral Production in the United States declined from 898,000 in 1952 to 647,000 in 1962, a rate of decrease of 3.2 per cent. The average annual change was -3.5 per cent; and when the widest and next widest deviations from the mean were eliminated, the results were -3.9 and -3.3 per cent respectively. If the mean of the growth rates from each year in the base period to every other year is examined, the statistic is somewhat lower than the foregoing rates of change: namely, -2.93 per cent.

In recent years the major component of Mining and Mineral Production for the United States has been crude petroleum and natural gas. The next two subcategories in order of employment magnitude are coal mining and mining and quarrying of non-metallic minerals. The decline in employment in coal mining from 391,000 in 1952 to 144,400 in 1962 has been mostly responsible for the over-all decrease in the category. However, employment in the major component of the category (crude petroleum and natural gas) has remained relatively

constant. There has been a slight increase (103,800 to 114,000) in mining and quarrying of non-metallic minerals. Some other components of the category show increases and some decreases. Given present technology and demand, there is little likelihood that the decline in employment in coal mining will not continue. But decreasing importance of coal mining in the total category will result in it having a smaller effect in percentage terms. A decrease in employment at a somewhat lower rate than that observed during the base period is being projected.

III. Manufacturing

Provo Metropolitan Area--Growth Rate: 0.5 per cent

Manufacturing employment in the Provo Metropolitan Area increased from 6,714 in 1952 to 8,774 in 1957 and then declined to 6,935 in 1962, a rate of increase of only .3 per cent per annum for the entire 11-year period. The average percentage change was 8.1; but when the widest and next widest deviations from the mean were eliminated, the results were 2.4 and 3.9 per cent respectively.

In the Provo Metropolitan Area the category was dominated by employment in primary metals industries which ranged from a high of 6,719 in 1957 to a low of 4,991 in 1959. Variations in this category due to such exogeneous factors as the Korean War, strikes, and recessions account for the wide percentage changes from year to year. However, the over-all trend in this category seems to be downward because of the decline in employment in the three-digit classification: blast furnaces, steel works, and rolling mills. This classification has moved downward from 1957 (5,876) to 1962 (4,515). There has been a modest

increase in a number of the other smaller categories which are especially tied to consumption, construction, etc. Unless there is a major change in the policy of the primary employer in the metals industries, it is felt that the slow growth of other manufacturing categories will be sufficient to bring about only a slight increase in employment in this category for the period of the projection.

Utah--Growth Rate: 2.0 per cent

Manufacturing employment in Utah increased from 32,056 in 1952 to 38,800 in 1962, a rate of increase of 1.9 per cent. The average annual change was 2.0 per cent; and when the widest and next widest deviations from the mean were eliminated, the results were 2.9 and 2.3 per cent respectively. The mean of the growth rates from each year to every other year was 1.75 per cent.

The foregoing statistics indicate that the growth rate most representative of the base period is 2.0 per cent. There has been some instability due to the importance of primary metals industries in the State which has distorted the statistics from year to year with respectto over-all employment in the category. If this classification is removed, the growth pattern is much more consistent. It is assumed that this consistency will persist throughout the period of projection.

United States--Growth Rate: 0.5 per cent

Employment in the United States in Manufacturing decreased from 15,783,200 in 1952 to 15,584,600 in 1962, a rate of decrease of 0.1 per cent per annum. The average percentage increase was -0.3 per cent; but when the widest and next widest deviations from the mean were eliminated, the results were 0.9 and 1.8 per cent respectively. The mean of the growth rates from

each year to every other year was -0.56 per cent. One of the reasons for the apparent decline in employment in Manufacturing from 1952 to 1962 is that 1952 represented the relatively high level of employment of the early Korean War boom. Both the post-Korean War decline and the 1957-1958 recession gave the average percentage figures and the growth rate figures a downward bias.

Unquestionably the tendency toward automation, which has especially affected the Manufacturing category, has permitted significant increases in output without noticeable increases in employment. This has been one of the principal factors giving rise to unemployment in some areas.

In spite of these considerations, it is felt that the down turn during the base period will be offset to some extent by the steady shift in the direction of consumer goods and away from producer goods. Typically, employment in the production of consumer goods involves a higher level of employment for an equal output value. A slight increase in Manufacturing is therefore being projected.

IV. Defense

Provo Metropolitan Area

There is at the present time no noticeable employment in the Defense category in the Provo Metropolitan Area. There is no reason to expect that there will be any employment of this type in the future.

Utah--Growth Rate: 25 per cent absolute increase from 1960 to 1965, another 25 per cent absolute increase by 1970, nothing thereafter.

In the earlier studies in this series, which projected population increases for the Salt Lake and Ogden metropolitan areas, it was pointed out that the assignment of increases in Defense employment for the State is arbitrary because the

determinants of employment are subject to a non-economic cause system. In those studies account was taken of the then current plans for expansion of defense activities.

By 1962 defense employment had exceeded the estimate for 1965. However, the cutbacks in recent months and the shifting emphasis in the armaments procurement program appear to indicate a temporary reduction in employment which will probably make the 1965 estimate reasonably close. The projections for Defense employment in the other studies are therefore being used in the present study.

United States--Growth Rate: 0.0 per cent

Employment in Defense increased from 2,048,500 in 1952 to 2,129,400 in 1962, an increase of 0.4 per cent per annum. The average annual percentage change was 0.5 per cent; and when the widest and next widest deviations from the mean were eliminated, the results were 1.5 per cent and 1.0 per cent respectively. The mean of the rates of change from each year to every other year was 0.19 per cent. It should be noted that from the end of the Korean War to 1960 Defense employment was relatively unchanged. There has been some increase since 1960.

It is impossible to project the economic growth of employment in this category. However, it does seem unlikely that there will be any large increase in the near future barring changes in cold war policy. In fact, the present administration seems to be committed to helping defense expenditures at the minimum "safe" level. These factors indicate that a reasonable position would be to project no increase in employment in this category.

V. Government

Provo Metropolitan Area--Growth Rate: 5.0 per cent to 1965, 4.5 per cent to 1970, 4.0 per cent to 1975, and 3.5 per cent to 1980.

Government employment in the Provo Metropolitan Area increased from 2,775 in 1952 to 4,598 in 1962, a rate of increase of 5.2 per cent per annum. The average percentage increase was 5.2 per cent; and when the widest and next widest deviations from the mean were eliminated, the results were 4.4 and 5.1 per cent respectively.

There is no reason to expect that the trend in Government employment will be any different than for the State as a whole--that is, steadily upward. The principal item in Government is for educational services. This is accompanied by an expansion of Government employment at both the State and local level to provide other services which have come to be expected in American communities. However, it is felt that much of this expansion was due to the pent-up demand from the depression of the 1930's and the war-time 1940's. Therefore, in all likelihood, there will be a tapering off in the rate of increase during the period of the projection.

Utah--Growth Rate: 4.5 per cent

Government employment in Utah increased from 29,492 in 1952 to 49,351 in 1962, a rate of increase of 5.3 per cent per annum. The average percentage increase was 5.4 per cent per annum; but when the widest and next widest deviations from the mean were eliminated, then the results were 4.3 and 5.0 per cent respectively.

If 1953 is taken as the starting point of the base period to avoid the increase in the federal employment of some 3,799 workers (approximately 77 per cent) from 1952 to 1953, then the most important components of growth have been state and local government employment, with the local the most significant. There is no reason, as suggested above, to think that this category will not continue to become more important. But the lower level of recent expansion of the federal component leads the writers to believe that the over-all growth will not be quite as high as indicated by the percentage statistics. Therefore, a growth rate of 4.5 per cent per annum for the State is projected.

United States--Growth Rate: 4.5 per cent to 1965; 4.0 per cent to 1970; 3.0 per cent to 1975; 2.0 per cent to 1980.

Employment in Government for the United States increased from 5,409,800 in 1952 to 8,221,700 in 1962, a rate of increase of 4.3 per cent per annum. The average percentage increase was 4.3 per cent; and when the widest and next widest deviations from the mean were eliminated, the results were 4.5 and 4.3 per cent respectively.

From 1953 to 1962 the federal government employment remained relatively constant, increasing slightly toward the end of the period. However, the state and local government increased from 4,340,000 in 1953 to 6,844,500 by 1962. It is apparent that the bulk of increase in government can be attributed to the expansion of state and local services. For the country as a whole it is believed there will be a tapering off in the rapid rate of increase of state and local components. As the rate at which new services are provided falls off, and schools are expanded to the point where they can take care of the tremendous anticipated enrollment, a limit

will be reached in the debt potential of state and local governments. These factors, coupled with the low rate of increase of federal employment, resulted in the selection of a declining rate of increase for employment in this category for the nation.

VI. Construction

Provo Metropolitan Area -- Growth Rate: 2.0 per cent.

Construction employment in the Metropolitan Area increased from 1,216 in 1952 to 1,591 in 1962, a rate of increase of 2.7 per cent per annum. The average percentage increase was 4.8 per cent; but when the widest and next widest deviations from the mean were eliminated, the results were 9.0 and 5.8 per cent respectively.

Employment in construction has been extremely erratic in the Provo Metropolitan Area, annual percentage changes ranging from −32.8 per cent to 34.6 per cent. The category is not a large one; as a result one or two major construction projects can cause very significant projection changes.

It is felt that growth in this category should be about the same as that for Utah as a whole. Therefore, the 2.0 per cent rate of increase for the State is being used as a guide line for the Metropolitan Area in the absence of any strong indication as to what would be a representative rate of increase during the base period.

Utah -- Growth Rate: 2.0 per cent.

Employment in Utah in Construction has increased from 11,770 in 1952 to 17,790 in 1962, a rate of increase of 4.2 per cent per annum. The average percentage increase was 4.6 per cent; but when the widest and the next widest deviations from the mean were eliminated, the results were 2.3 per cent and 0.8 per cent respectively. The writers feel that growth in the construction industry will be slightly lower than growth in employment as a whole because much of the backlog of residential construction has

If 1953 is taken as the starting point of the base period to avoid the increase in the federal employment of some 3,799 workers (approximately 77 per cent) from 1952 to 1953, then the most important components of growth have been state and local government employment, with the local the most significant. There is no reason, as suggested above, to think that this category will not continue to become more important. But the lower level of recent expansion of the federal component leads the writers to believe that the over-all growth will not be quite as high as indicated by the percentage statistics. Therefore, a growth rate of 4.5 per cent per annum for the State is projected.

United States--Growth Rate: 4.5 per cent to 1965; 4.0 per cent to 1970; 3.0 per cent to 1975; 2.0 per cent to 1980.

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From 1953 to 1962 the federal government employment remained relatively constant, increasing slightly toward the end of the period. However, the state and local government increased from 4,340,000 in 1953 to 6,844,500 by 1962. It is apparent that the bulk of increase in government can be attributed to the expansion of state and local services. For the country as a whole it is believed there will be a tapering off in the rapid rate of increase of state and local components. As the rate at which new services are provided falls off, and schools are expanded to the point where they can take care of the tremendous anticipated enrollment, a limit

VII. Transportation, Communications and Utilities.

Provo Metropolitan Area -- Growth Rate: 0.0 per cent.

Employment in the Metropolitan Area decreased from 1,320 in 1952 to 1,146 in 1962, a rate of decrease of 1.4 per cent per annum. The average annual percentage change was -1.2; but when the widest and next widest deviations were eliminated from the mean, the results were 0.2 and 1.2 per cent respectively.

The category is a small one; hence, variations of even small magnitude in any major components of the category will result in large percentage changes. It is, however, well known that employment in railroad transportation has been rather steadily declining. Other components in this category, such as local and interurban transit communications, and electric utilities and sanitation services, are directly linked to population but are subject to the offsetting element of automation. The writers believe that the decline in employment is attributable largely to the work-rule trends in railroad transportation. It is felt that a reasonable estimate would be to project no increase in this category.

Utah -- Growth Rate: 0.0 per cent.

Employment in Transportation, Communication and Utilities at the state level decreased from 22,985 in 1952 to 21,932 in 1962, a rate of decrease of 0.5 per cent per annum. The average percentage change was -0.4 per cent, and when the widest and next widest deviations from the mean were eliminated, then the results were 0.0 and 0.4 per cent respectively.

It should be noted again that the decline was largely due to the decreased employment in railroad transportation from 10,774 in 1952 to 7,735 in 1962. In other components, such as motor freight transportation and warehousing and

communications, there have been noticeable increases. These components, which are linked to population increases and the shift from railroad to motor freight, should at least offset the decline in railroad transportation. It is therefore assumed that employment will probably remain unchanged for the entire category.

United States--Growth Rate: 0.0 per cent.

In the United States, employment in Transportation, Communication, and Utilities has decreased from 4,248,000 in 1952 to 3,925,000 in 1962, a rate of decrease of 0.8 per cent per annum. The average percentage change was -0.8 per cent; and when the widest and next widest deviations from the mean were eliminated, then the results were -0.2 and 0.4 per cent respectively.

Again it should be noted that the major cause of the decline is found in interstate railroads -- employment in this component declined by almost 600,000 workers or approximately 43 per cent. It is likely, as a result of recent occurrences in the railroad industry with respect to work rules, that the decline in railroad employment will continue. However, it should be noted that in the State of Utah the other components of this category are growing. It is felt that in the not too distant future employment for the category as a whole will be stabilized at the 1960-1962 level.

VIII. Wholesale and Retail Trade.

Provo Metropolitan Area -- Growth Rate: 2.0 per cent.

Employment in the wholesale and retail trades in the Provo Metropolitan Area increased from 3,726 in 1952 to 4, 649 in 1962, a rate of increase of 2.2 per cent per annum. The average percentage increase was 2.3 per cent; but when the widest and next wides. deviations from the mean were eliminated, the results

were 1.7 and 2.2 per cent respectively.

One reason for the somewhat lower growth rate in the Provo Metropolitan Area than in the other Utah Metropolitan Areas is the fact that wholesale trade is a much smaller percentage of the total category than it is for the State as a whole. For Utah the percentage of this whole category employed in wholesale trade is about 27-28 per cent; but for the Provo Metropolitan Area it is only some 12-13 per cent. The other factor which is significant in bringing about a lower than anticipated growth rate in this category is the dependence of Provo on the Salt Lake marketing area for many different types of services. Therefore, a growth rate of 2 per cent, somewhat lower than the rate of growth for employment as a whole in the Provo Metropolitan Area, is being used.

Utah --Growth Rate: 3.0 per cent

Employment in the Wholesale and Retail Trades in Utah increased from 46,938 in 1952 to 63,411 in 1962, a rate of increase of 3.1 per cent per annum. The average percentage increase was also 3.1; but when the widest and next widest deviations from the mean were eliminated, then the results were 3.5 and 3.9 per cent respectively.

When the mean of the growth rate from each year to every other year is computed, the results are virtually the same as the growth rate for the entire period and the average percentage change; i.e., 3.05 per cent. There is no reason to feel that the representative 3 per cent figure should not continue during the period of the forecast. It might be noted that this is the same result which was obtained in the previous studies in this series.

United States--Growth Rate: 2.0 per cent.

Employment in Wholesale and Retail Trade in the United States increased from

10,004,000 in 1952 to 11,571,000 in 1962, a rate of increase of 1.5 per cent. The average percentage increase was 1.0 per cent; but when the widest and next widest deviations from the mean were eliminated, the results were 0.7 and 1.1 per cent respectively.

The average percentages were sharply affected by the post-Korean War adjustment and the 1957 recession. The writers also feel that as the economy becomes more mature there will be a shift towards the tertiary type activities. Therefore, a somewhat higher rate than that justified by the base period statistics is used for projecting employment in Wholeslae and Retail Trade for the Nation.

IX. Finance, Insurance, and Real Estate

Provo Metropolitan Area--Growth Rate: 5.0 per cent.

Employment in this category increased from 354 in 1952 to 603 in 1962, a rate of increase of 5.5 per cent. The average percentage increase was 5.8 per cent; but when the widest and next widest deviations from the mean were eliminated, then the results are 3.4 and 4.2 per cent respectively.

The same cautions should be applied in this category as in other small categories. It is possible that any change, even of small magnitude, would have a significant effect in percentage terms. In general, however, the writers have found in examining the other metropolitan areas and the Wasatch Front that growth in Finance has been phenomenally fast. They feel that past experience in Provo, as well as along the entire Wasatch Front, justifies the very rapid growth rate of 5 per cent.

Utah--Growth Rate: 5.0 per cent to 1965, 4.5 per cent to 1970, 4.0 per cent to 1980.

Employment in the Finance, Insurance, and Real Estate increased in Utah

from 7,180 in 1952 to 12,034 in 1962, a rate of increase of 5.3 per cent. The average percentage increase also was 5.3; and when the widest and next widest deviations from the mean were eliminated, the results were 4.7 and 5.0 per cent respectively.

In recent years there has been a tendency to develop some economies of large scale production which are increasingly affecting employment in banking, insurance, and in a number of smaller financial institutions. It is felt that the rate of increase in finance will tend to decline during the period of the forecast.

United States--Growth Rate: 3.5 per cent.

Employment in the Finance, Insurance, and Real Estate category in the United States increased from 2,069,000 in 1952 to 2,793,100 in 1962, a rate of increase of 2.8 per cent per annum. The average percentage increase was 3.0 per cent; and when the widest and next widest deviations from the mean were eliminated, the results were 2.9 and 3.0 per cent respectively.

With an increasingly mature, consumption-oriented economy; with a larger share of the population owning or acquiring property and insurance and investing in stocks and bonds; and with the increasing importance of consumer finance, installment credit, etc., it appears likely that the finance sector of the economy will expand at a somewhat faster rate than during the base period. The base period experience appears to be about 3.0 per cent per annum. Therefore, a projection rate of 3.5 per cent is being used.

X. Services

Provo Metropolitan Area--Growth Rate: See discussion.

A difficult problem arose in attempting to find a growth rate useful in projecting employment in Services. Employment in this category increased from 2,329 in

1952 to 5,747 in 1962, a rate of increase of 9.5 per cent per annum. The average annual change was also 9.5 per cent. When the widest and next widest deviations from the mean were eliminated, the results were increases of 8.9 and 8.2 per cent. However, the growth rates in the base period were not very useful in projecting employment in this category because educational services--nearly all at Brigham Young University-- account for one-half or more of total category employment, and past enrollments may have little bearing on future enrollments at BYU. Officials at BYU were uncertain regarding future enrollment policies at the institution.

Given this situation, the following procedures were followed. Services other than education were projected at a rate of increase of 7.0 per cent through 1965, 6.0 per cent through 1970, 5.0 per cent through 1975, and 4.5 per cent through 1980. The basic enrollment estimates for BYU made by the Utah Coordinating Council of Higher Education were used as a basis for estimating employment in educational services. The enrollments assumed were 15,000 in 1965, 18,000 in 1970, 22,000 in 1975 and 1980. The two sets of figures - education and non-educational services - were then combined to obtain total employment in Services for 1965, 1970, 1975, and 1980.

Utah--Growth Rate: 4.5 per cent.

Employment in Utah in Services increased from 21,448 in 1952 to 35,126 in 1962, a rate of increase of 5.1 per cent per annum. The average percentage change was also 5.1 per cent; but when the widest and next widest deviations from the mean were eliminated, the results were 4.7 and 4.9 per cent respectively.

A rate of extrapolation of 5 per cent would appear to be justified by the base period experience. However, it is felt that as the Utah economy progresses,

there will be a tendency for this category to move in the direction of the national rate of growth. Therefore, a growth rate slightly lower than the one justified by the base period experience is being used.

United States--Growth Rate: 3.0 per cent.

Employment in Services in the United States increased from 5,730,000 in 1952 to 7,757,000 in 1962, a rate of increase of 3.1 per cent per annum. The average percentage increase was 3.1 per cent; but when the widest and next widest deviations from the mean were eliminated the results were 3.3 and 3.2 per cent respectively.

The writers feel that one of the important characteristics of a maturing economy will be a long run tendency towards a increasing emphasis on services. A growth rate of 3 per cent appears to be representative of the base period. If this growth rate is used it will result in the growth of the service category at a faster rate than any other category except finance. This relatively faster growth rate will of course result in the increasing importance of services in the economy.

Summary of Growth Rates

The growth rates which have been discussed are summarized in Table 17. It should be noted that for the Provo Metropolitan Area, Services (Category X), and Utah, Defense (Category IV), the percentages refer to the absolute magnitudes of increase for each period rather than to extrapolation rates. The remainder of the rates are annual percentage increases.

The next step in the procedure was to apply the rates by category by government level to employment during either 1962 or the average of 1962 and 1961 if the 1962 employment was different from the 1961 employment by an amount greater

TABLE 17

GROWTH RATES FOR ESTIMATING CLASSIFIED EMPLOYEES

	Classification	Growth Rates - Percentages 1965	1970	1975	1980
	Provo Metropolitan Area				
I.	Agriculture	-2.0	-1.5	-1.0	-1.0
II.	Mining & Mineral Production	0.0	0.0	0.0	0.0
III.	Manufacturing	0.5	0.5	0.5	0.5
IV.	Defense	a	a	a	a
V.	Government	5.0	4.5	4.0	3.5
VI.	Construction	2.0	2.0	2.0	2.0
VII.	Transportation, Communication & Utilities	0.0	0.0	0.0	0.0
VIII.	Wholesale & Retail Trade	2.0	2.0	2.0	2.0
IX.	Finance, Insurance & Real Estate	5.0	5.0	5.0	5.0
X.	Services	5.1[b]	5.6[b]	4.5[b]	2.0[b]
	State of Utah				
I.	Agriculture	-2.0	-1.5	-1.0	0.0
II.	Mining & Mineral Production	0.0	0.0	0.0	0.0
III.	Manufacturing	2.0	2.0	2.0	2.0
IV.	Defense	25.0[c]	25.0[c]	0.0	0.0
V.	Government	4.5	4.5	4.5	4.5
VI.	Construction	2.0	2.0	2.0	2.0
VII.	Transportation, Communication & Utilities	0.0	0.0	0.0	0.0
VIII.	Wholesale & Retail Trade	3.0	3.0	3.0	3.0
IX.	Finance, Insurance & Real Estate	5.0	4.5	4.0	4.0
X.	Services	4.5	4.5	4.5	4.5
	United States				
I.	Agriculture	-1.5	-1.5	-1.5	-1.5
II.	Mining & Mineral Production	-2.5	-2.5	-2.5	-2.5
III.	Manufacturing	0.5	0.5	0.5	0.5
IV.	Defense	0.0	0.0	0.0	0.0
V.	Government	4.5	4.0	3.0	2.0
VI.	Construction	1.5	1.5	1.5	1.5
VII.	Transportation, Communication & Utilities	0.0	0.0	0.0	0.0
VIII.	Wholesale & Retail Trade	2.0	2.0	2.0	2.0
IX.	Finance, Insurance & Real Estate	3.5	3.5	3.5	3.5
X.	Services	3.0	3.0	3.0	3.0

[a]Numbers too small to be meaningful.

[b]Because of the nature of this category, employment for each year was projected separately. The percentages shown here were computed from these numbers.

[c]Absolute magnitude of increase using 1960 rather than 1962 as the base year. (See Table 19 and pp. [illegible]-55 for more details.)

Source: Derived from data in Tables 1, 2, 3, 4, and 7 and judgment of the writers.

than the extrapolation rate being used. Employment was rounded to the nearest ten in the case of the Provo Metropolitan Area, to the nearest hundred for Utah, and to the nearest thousand in the case of the United States. Using these rates, employment was projected to 1965 and then by five-year periods through 1980.

The results of these projections are given in Tables 18, 19 and 20. For convenience, the tables also include the projections of the individual categories as a per cent of total employment, the rank, and the location quotient. The last row of each table gives the total classified employees for that level of government.

Chart 2 shows the change in relative importance of projected employment in the major categories comprising about 75 per cent of the total classified workers.

General Comments on the Economic Pattern, 1962-1980

If one examines the aggregate growth rates for classified employment for the entire period of the projection, it will be noted that employment in the Provo Metropolitan Area is projected at a slightly lower rate than during the period 1952-1962 (2.4 as compared with 2.6 per cent). Utah employment is projected at a slightly higher rate (2.7 as compared with 2.5 per cent per annum). For the United States, a growth rate of 1.5 is used; this rate should be contrasted with the base growth rate of 0.8 for the period 1952-1962.

Classified Employment

	Base	1980	Growth Rate
Provo Metropolitan Area	27,400	42,050	2.4
Utah	300,100	486,500	2.7
United States	60,052 (000's)	79,772 (000's)	1.5

The equivalent table for the base period may be found on page 43.

TABLE 18

ESTIMATED NUMBER OF CLASSIFIED EMPLOYEES BY MAJOR CATEGORIES AND RELATIVE IMPORTANCE OF EACH CATEGORY IN THE PROVO METROPOLITAN AREA
1965, 1970, 1975, and 1980

Classification	Base[a]				1965				1970				1975				1980			
	Number	Per Cent of Total	Rank	Location Quotient	Number	Per Cent of Total	Rank	Location Quotient	Number	Per Cent of Total	Rank	Location Quotient	Number	Per Cent of Total	Rank	Location Quotient	Number	Per Cent of Total	Rank	Location Quotient
I. Agriculture	2,229	8.2	5	1.17	2,100	7.0	5	1.13	1,850	5.5	5	1.10	1,530	4.0	6	0.95	1,360	3.2	7	0.89
II. Mining and Mineral Production	143	0.5	9	0.12	140	0.5	9	0.12	140	0.4	9	0.11	140	0.4	9	0.13	140	0.3	9	0.11
III. Manufacturing	6,935	25.1	1	1.99	7,040	23.6	1	1.87	7,220	21.4	2	1.78	7,400	19.4	3	1.66	7,550	18.0	3	1.61
IV. Defense	--	0.0	10	--	--	0.0	10	--	--	0.0	10	--	--	0.0	10	--	--	0.0	10	--
V. Government	4,598	16.6	4	1.03	5,320	17.9	3	1.05	6,630	19.7	3	1.07	8,070	21.1	2	1.05	9,590	22.8	2	1.04
VI. Construction	1,419	5.7	6	0.98	1,510	5.1	6	0.93	1,660	4.9	6	0.94	1,840	4.8	5	0.94	2,030	4.8	5	0.98
VII. Transportation, Communication & Utilities	1,141	4.1	7	0.58	1,140	3.8	7	0.56	1,140	3.4	7	0.58	1,140	3.0	7	0.58	1,140	2.7	8	0.60
VIII. Wholesale and Retail Trade	4,595	16.8	3	0.82	4,880	16.4	4	0.78	5,390	16.0	4	0.76	5,940	15.6	4	0.73	6,560	15.6	4	0.72
IX. Finance, Insurance and Real Estate	603	2.2	8	0.56	700	2.3	8	0.54	890	2.6	8	0.57	1,140	3.0	8	0.60	1,450	3.5	6	0.66
X. Services	5,737	20.8	2	1.82	6,980	23.4	2	1.94	8,790	26.1	1	2.01	10,970	28.7	1	2.01	12,230	29.1	1	1.88
Total Classified Employees	27,400	100.0			29,810	100.0			33,710	100.0			38,170	100.0			42,050	100.0		

[a] 1962 or average of 1961 and 1962.

Source: Derived from Tables 1, 4, and 17.

TABLE 19

ESTIMATED NUMBER OF CLASSIFIED EMPLOYEES BY MAJOR CATEGORIES AND RELATIVE IMPORTANCE OF EACH CATEGORY IN UTAH
1965, 1970, 1975, AND 1980

	Classification	Base[a]				1965				1970				1975				1980			
		Number	Per Cent of Total	Rank	Location Quotient	Number	Per Cent of Total	Rank	Location Quotient	Number	Per Cent of Total	Rank	Location Quotient	Number	Per Cent of Total	Rank	Location Quotient	Number	Per Cent of Total	Rank	Location Quotient
I.	Agriculture	21,258	7.0	7	0.81	20,000	6.2	7	0.77	18,600	5.0	8	0.73	17,700	4.2	9	0.71	17,700	3.6	9	0.71
II.	Mining and Mineral Production	13,436	4.3	9	3.91	13,400	4.2	10	4.20	13,400	3.6	10	4.50	13,400	3.2	10	5.34	13,400	2.8	10	5.60
III.	Manufacturing	38,259	12.6	3	0.49	40,600	12.6	3	0.51	44,800	12.0	4	0.51	49,500	11.7	4	0.53	54,700	11.2	4	0.53
IV.	Defense	32,131[b]	11.1	5	3.17	33,400	10.3	5	3.03	41,800	11.2	5	3.61	41,800	9.8	5	3.38	41,800	8.6	5	3.19
V.	Government	48,218	16.1	2	1.18	55,000	17.0	2	1.16	68,600	18.4	2	1.12	85,500	20.1	2	1.15	106,500	21.9	1	1.22
VI.	Construction	16,680	5.8	8	1.29	17,700	5.5	8	1.22	19,600	5.2	7	1.18	21,600	5.1	7	1.16	23,800	4.9	7	1.11
VII.	Transportation, Communication & Utilities	21,932	7.1	6	1.09	21,900	6.8	6	1.10	21,900	5.9	6	1.04	21,900	5.2	6	0.98	21,900	4.5	8	0.92
VIII.	Wholesale and Retail Trade	61,985	20.6	1	1.08	67,800	21.0	1	1.09	78,500	21.1	1	1.07	91,000	21.5	1	1.07	105,500	21.7	2	1.06
IX.	Finance, Insurance & Real Estate	12,034	3.9	10	0.85	14,000	4.3	9	0.88	17,400	4.6	9	0.94	21,100	5.0	8	0.85	25,700	5.3	6	0.82
X.	Services	34,198	11.4	4	0.89	39,000	12.1	4	0.91	48,600	13.0	3	0.98	60,600	14.3	3	0.94	75,500	15.5	3	0.95
	Total Classified Employees	300,131	99.9			322,800	100.0			373,200	100.0			424,100	100.0			486,500	100.0		

[a] 1962 or average of 1961 and 1962

[b] This number is the average of 1961 and 1962, but the estimates for Defense in this study are the same as those used in the two previous studies of this series. Thus, the base number for Defense is 26,700 in 1960. See pp.54-55 herein for a full explanation of this category.

Source: Derived from Tables 2 and 17.

TABLE 20

ESTIMATED NUMBER OF CLASSIFIED EMPLOYEES BY MAJOR CATEGORIES AND RELATIVE IMPORTANCE OF EACH CATEGORY IN THE UNITED STATES
1965, 1970, 1975, and 1980

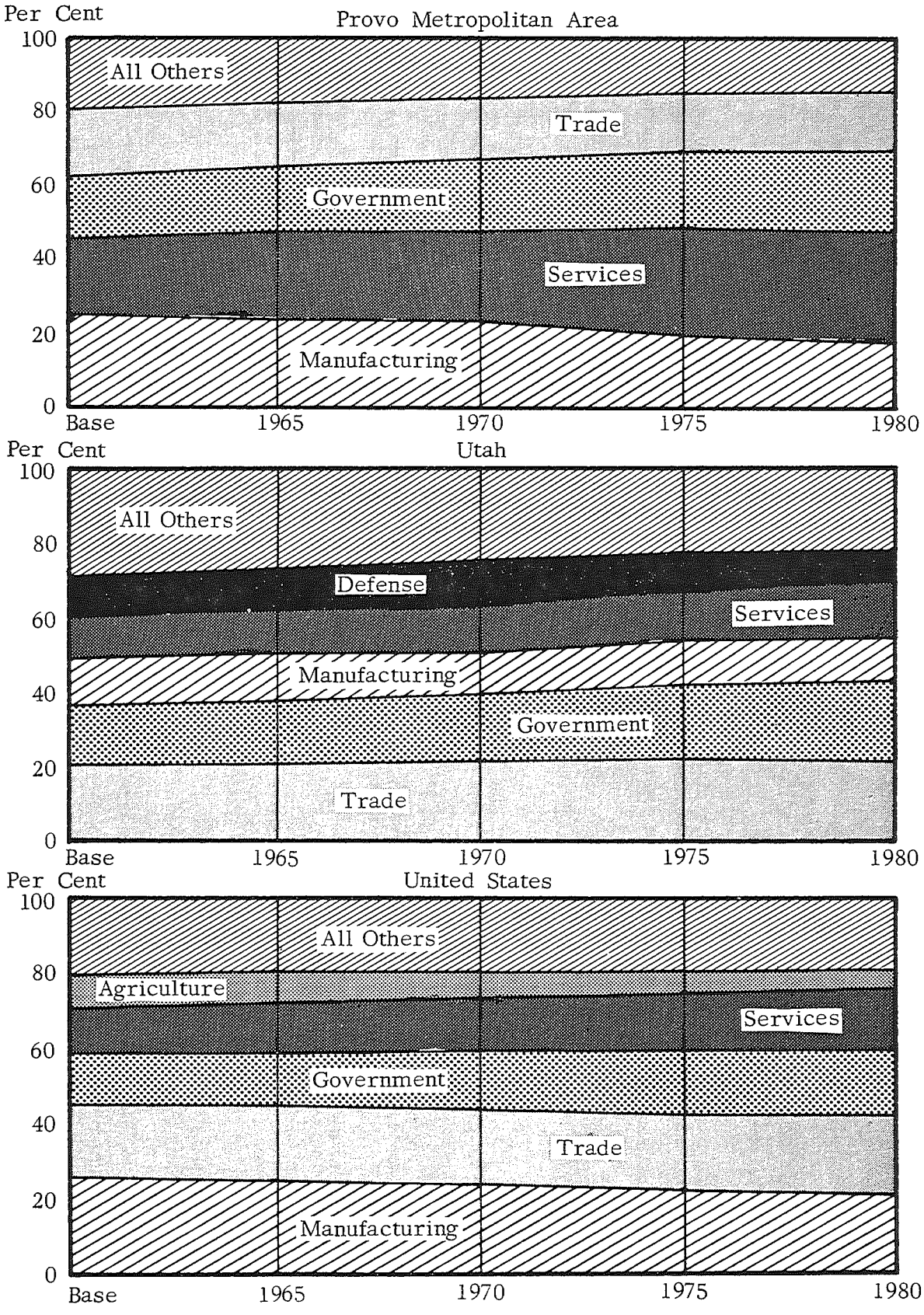
	Classification	Base[a] Number (000)	Base[a] Per Cent of Total	Base[a] Rank	1965 Number (000)	1965 Per Cent of Total	1965 Rank	1970 Number (000)	1970 Per Cent of Total	1970 Rank	1975 Number (000)	1975 Per Cent of Total	1975 Rank	1980 Number (000)	1980 Per Cent of Total	1980 Rank
I.	Agriculture	5,326.0	8.9	5	5,090	8.1	5	4,730	6.9	5	4,395	5.9	5	4,084	5.1	6
II.	Mining and Mineral Production	647.0	1.1	10	600	1.0	10	529	0.8	10	466	0.6	10	410	0.5	10
III.	Manufacturing	15,377.1	25.6	1	15,609	24.8	1	16,003	23.4	1	16,407	22.2	1	16,821	21.1	1
IV.	Defense	2,129.4	3.5	9	2,129	3.4	9	2,129	3.1	9	2,129	2.9	9	2,129	2.7	9
V.	Government	8,052.5	13.4	3	9,189	14.6	3	11,180	16.4	3	12,961	17.5	3	14,310	17.9	3
VI.	Construction	2,696.0	4.5	8	2,819	4.5	8	3,037	4.4	8	3,272	4.4	8	3,525	4.4	8
VII.	Transportation, Communication and Utilities	3,925,0	6.5	6	3,925	6.2	6	3,925	5.7	6	3,925	5.3	7	3,925	4.9	7
VIII.	Wholesale and Retail Trade	11,468.5	19.1	2	12,171	19.3	2	13,437	19.7	2	14,836	20.1	2	16,380	20.5	2
XI.	Finance, Insurance & Real Estate	2,793.1	4.7	7	3,097	4.9	7	3,678	5.4	7	4,368	5.9	6	5,188	6.5	5
X.	Services	7,636.0	12.7	4	8,344	13.3	4	9,673	14.2	4	11,214	15.2	4	13,000	16.3	4
	Total Classified Employees	60,051.6	100.0		62,973	100.1		68,321	100.0		73,973	100.0		79,772	99.9	

[a] 1962 or average of 1961 and 1962.

Source: Tables 3 and 17.

CHART 2

PERCENTAGE DISTRIBUTION OF CLASSIFIED WORKERS BY MAJOR CATEGORIES, PROVO METROPOLITAN AREA, UTAH, AND THE UNITED STATES 1965, 1970, 1975, 1980



Source: Tables 18, 19, and 20

It may be startling to discover that the growth rates in some cases differ from the base period experience (in the case of the United States the difference is large) in view of the general position taken in this study that for the most part projections would follow the base period experience. It should be remembered, however, that each of the ten employment categories was projected separately and principally, but not exclusively, on the basis of the base period experience. The writers feel that the analysis of the disaggregated employment data in terms of the various statistics developed in this study has resulted in a more realistic evaluation of the growth characteristics of the base period than would be given by a simple extrapolation of the aggregate experience. This method has made it possible to avoid a number of the traps into which the customary approach to forecasting falls.

For the Provo Metropolitan Area, the categories which are predicted to decline significantly in relative importance are Agriculture and Manufacturing. The areas of significant increase are Governmemt, Finance, and Services. These are the categories which might be expected to change given the characteristics of the Provo economy which have been referred to above. Several other categories may show relative changes, but will not have a major impact because of small absolute size.

For Utah, the areas of relative declining importance are Agriculture, Mining and Mineral Products, and Transportation and Communication. Employment will significantly increase (in relative terms) in Government, Finance, and Services.

For the United States, the growth categories are Government, Finance, Services, and Wholesale and Retail Trade; whereas the principal declining categories are Agriculture, Mining and Mineral Production, and Transportation and Communication.

For all three levels of government, the shifts in relative importance of the employment categories can be seen by an examination of Tables 10 through 15, which indicate the relative importance in terms of rank of the various industry categories. Shifts in rankings can be traced through the period of the projection in these tables.

The projections of relative growth rates are consistent with the base period observations in that the State of Utah is growing somewhat faster than the Provo Metropolitan Area, and that the latter is growing faster than the Nation, which was projected at an annual growth rate of 3.4 per cent in the previous studies in this series. It should be remembered that the State is affected very much by the rapidly growing Salt Lake Metropolitan Area. The Provo Metropolitan Area is growing more rapidly, of course, than the State outside the Salt Lake Metropolitan Area, but not as rapidly as Salt Lake. In terms of the relationship between the Provo Metropolitan Area and the State, an examination of the location quotients indicates that only in Manufacturing and Services does employment in the Provo Metropolitan Area as a percentage of total classified employment significantly exceed that of the State.

It would appear that the Provo Metropolitan Area economy is dependent on two major activities -- primary metals manufacturing and education. The fact that the former is not sustaining a rate of increase equal to the average is the explanation for the high level of unemployment in the area, which in turn explains why other activities are not able to employ workers in the same proportion as the State.

Table 21, RATIO OF POPULATION TO NUMBERS OF WORKERS IN EACH

EMPLOYMENT CATEGORY - 1960, reflects the concentration of employment in educational services and primary metals industries as well as the high level of employment in these industries. Table 21 gives the ratio of population to workers for the United States, Utah, the Provo Metropolitan Area, the Salt Lake Metropolitan Area, and the Ogden Metropolitan Area for 1960. As the ratio becomes higher, it is implied that the population gives support for few workers in each category. A comparison of the Provo Metropolitan Area with the other areas shows that the ratio is higher in Government, Construction, Transportation and Communication, and Wholesale and Retail Trade. The relatively low ratio in Services reflects the heavy concentration in educational services. The other categories are either not relevant because of their size, or, in the case of Manufacturing, constitutes Provo's major export industry. Another way of looking at the problem is that Provo's major export industries, Manufacturing and Services, do not support the other industries to the same extent as the other areas considered.

A more direct comparison among the three metropolitan areas of Utah--Ogden, Salt Lake, and Provo-- is provided by Tables 22, 23 and 24 entitled respectively, COMPARISON OF THE RELATIVE IMPORTANCE OF INDUSTRIAL CATEGORIES IN THE PROVO METROPOLITAN AREA WITH THE SAME CATEGORIES IN THE SALT LAKE METROPOLITAN AREA (LOCATION QUOTIENTS)1958-1962; COMPARION OF THE RELATIVE IMPORTANCE OF INDUSTRIAL CATEGORIES IN THE PROVO METROPOLITAN AREA WITH THE SAME CATEGORIES IN THE OGDEN METROPOLITAN AREA (LOCATION QUOTIENTS) 1958-1962; COMPARISON OF THE RELATIVE IMPORTANCE OF INDUSTRIAL CATEGORIES IN THE OGDEN METROPOLITAN AREA WITH THE SAME CATEGORIES IN THE SALT LAKE METROPOLITAN AREA (LOCATION QUOTIENTS) 1958-1962. In every case, in making the comparisons with Salt Lake, except for

TABLE 21

RATIO OF POPULATION TO NUMBER OF WORKERS IN EACH EMPLOYMENT CATEGORY - 1960

Category	United States (000)		State of Utah		Provo Metropolitan Area		Salt Lake Metropolitan Area		Ogden Metropolitan Area	
I. Agriculture										
Population	179,326	31	890,627	40	106,991	46	413,959	166	144,580	79
Workers	5,723		22,175		2,321		2,490		1,838	
II. Mining and Mineral Production										
Population	179,326	253	890,627	64	106,991	884	413,959	62	144,580	4,131
Workers	709		13,844		121		6,682		35	
III. Manufacturing										
Population	179,326	11	890,627	24	106,991	14	413,959	20	144,580	32
Workers	15,676		37,499		7,605		20,782		4,555	
IV. Defense										
Population	179,326	88	890,627	32	106,991	a	413,959	103	144,580	9
Workers	2,027		27,618		4		4,029		15,786	
V. Government										
Population	179,326	24	890,627	20	106,991	25	413,959	20	144,580	20
Workers	7,579		44,169		4,341		21,200		7,203	
VI. Construction										
Population	179,326	62	890,627	60	106,991	73	413,959	49	144,580	68
Workers	2,882		14,851		1,469		8,380		2,123	
VII. Transportation, Communication and Utilities										
Population	179,326	45	890,627	40	106,991	89	413,959	32	144,580	31
Workers	4,017		22,155		1,203		13,053		4,635	
VIII. Wholesale and Retail Trade										
Population	179,326	16	890,627	15	106,991	22	413,959	11	144,580	19
Workers	11,412		59,583		4,659		37,454		7,714	
IX. Finance, Insurance and Real Estate										
Population	179,326	67	890,627	79	106,991	180	413,959	48	144,580	137
Workers	2,684		11,292		595		8,650		1,056	
X. Services										
Population	179,326	24	890,627	28	106,991	21	413,959	22	144,580	40
Workers	7,361		31,761		5,170		18,705		3,596	
Total Classified										
Population	179,326	2.99	890,627	3.12	106,991	3.89	413,959	2.93	144,580	2.98
Workers	60,070		285,885		27,494		141,428		48,544	

[a]Number employed too small for a meaningful ratio.

Source: Population--U.S. Bureau of the Census; employment--Tables 1, 2 and 3.

TABLE 22

COMPARISON OF THE RELATIVE IMPORTANCE OF INDUSTRIAL CATEGORIES IN THE PROVO METROPOLITAN AREA WITH THE SAME CATEGORIES IN THE SALT LAKE METROPOLITAN AREA (LOCATION QUOTIENTS)
1958-1962

	Category	1958		1959		1960		1961		1962	
		Ratio	L.Q.	Ratio	L.Q.	Ratio	L.Q.	Ratio	L.Q.	Ratio	L.Q.
I.	Agriculture										
	% P.M.A.	9.6	4.80	9.3	5.17	8.4	4.67	8.1	5.06	8.2	5.12
	% S.L.M.A.	2.0		1.8		1.8		1.6		1.6	
II.	Mining and Mineral Production										
	% P.M.A.	0.5	0.10	0.4	0.10	0.4	0.09	0.6	0.13	0.5	0.11
	% S.L.M.A.	4.9		4.2		4.7		4.7		4.4	
III.	Manufacturing										
	% P.M.A.	29.4	1.93	26.8	1.86	27.7	1.88	27.2	1.92	25.1	1.87
	% S.L.M.A.	15.2		14.4		14.7		14 2		13.4	
IV.	Defense										
	% P.M.A.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	% S.L.M.A.	1.2		2.2		2.8		3.7		5.5	
V.	Government										
	% P.M.A.	15.0	0.99	15.0	0.98	15.8	1.05	16.5	1.06	16.6	1.08
	% S.L.M.A.	15.2		15.3		15.0		15.6		15.3	
VI.	Construction										
	% P.M.A.	4.7	0.75	5.0	0.77	5.3	0.90	4.6	0.79	5.7	0.92
	% S.L.M.A.	6.3		6.5		5.9		5.8		6.2	
VII.	Transportation, Communication and Utilities										
	% P.M.A.	5.0	0.49	4.8	0.49	4.4	0.48	4.2	0.46	4.1	0.48
	% S.L.M.A.	10.2		9.7		9.2		9.1		8.6	
VIII.	Wholesale and Retail Trade										
	% P.M.A.	17.1	0.66	17.8	0.67	16.9	0.64	16.8	0.65	16.8	0.65
	% S.L.M.A.	26.1		26.6		26.5		26.0		25.9	
IX.	Finance, Insurance and Real Estate										
	% P.M.A.	2.2	0.37	2.3	0.38	2.2	0.36	2.1	0.35	2.2	0.37
	% S.L.M.A.	6.0		6.1		6.1		6.0		5.9	
X	Services										
	% P.M.A.	16.5	1.29	18.6	1.41	18.8	1.42	20.0	1.50	20.8	1.56
	% S.L.M.A.	12.8		13.2		13.2		13.3		13.3	

Source: Derived from Table 4 and similar data computed for Salt Lake Metropolitan Area.

TABLE 23

COMPARISON OF THE RELATIVE IMPORTANCE OF INDUSTRIAL CATEGORIES IN THE PROVO METROPOLITAN AREA WITH THE SAME CATEGORIES IN THE OGDEN METROPOLITAN AREA (LOCATION QUOTIENTS)
1958-1962

Category	1958		1959		1960		1961		1962	
	Ratio	L.Q.	Ratio	L.Q.	Ratio	L.Q.	Ratio	L.Q.	Ratio	L.Q.
I. Agriculture										
% P.M.A	9.6	2.18	9.3	2.32	8.4	2.21	8.1	2.31	8.2	2.28
% O.M.A.	4.4		4.0		3.8		3.5		3.6	
II. Mining and Mineral Production										
% P.M.A.	0.5	5.00	0.4	4.00	0.4	4.00	0.6	6.00	0.5	5.00
% O.M.A.	0.1		0.1		0.1		0.1		0.1	
III. Manufacturing										
% P.M.A.	29.4	3.00	26.8	2.85	27.7	2.95	27.2	2.83	25.1	2.70
% O.M.A.	9.8		9.4		9.4		9.6		9.3	
IV. Defense										
% P.M.A.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% O.M.A.	31.6		32.4		32.5		32.0		30.0	
V. Government										
% P.M.A.	15.0	1.01	15.0	1.02	15.8	1.07	16.5	1.06	16.6	0.91
% O.M.A.	14.9		14.7		14.8		15.6		18.3	
VI. Construction										
% P.M.A.	4.7	1.04	5.0	1.09	5.3	1.20	4.6	1.00	5.7	1.36
% O.M.A.	4.5		4.6		4.4		4.6		4.2	
VII. Transportation, Communication, and Utilities										
% P.M.A	5.0	0.50	4.8	0.48	4.4	0.46	4.2	0.47	4.1	0.49
% O.M.A.	10.0		9.9		9.5		8.8		8.3	
VIII. Wholesale and Retail Trade										
% P.M.A.	17.1	1.13	17.8	1.16	16.9	1.06	16.8	1.06	16.8	1.06
% O.M.A.	15.1		15.3		15.9		15.9		15.9	
IX. Finance, Insurance and Real Estate										
% P.M.A.	2.2	1.05	2.3	1.05	2.2	1.00	2.1	0.95	2.2	0.92
% O.M.A.	2.1		2.2		2.2		2.2		2.4	
X. Services										
% P.M.A.	16.5	2.17	18.6	2.55	18.8	2.54	20.0	2.63	20.8	2.63
% O.M.A.	7.6		7.3		7.4		7.6		7.9	

Source: Derived from Table 4 and similar data computed for Ogden Metropolitan Area.

TABLE 24

COMPARISON OF THE RELATIVE IMPORTANCE OF INDUSTRIAL CATEGORIES IN THE OGDEN METROPOLITAN AREA WITH THE SAME CATEGORIES IN THE SALT LAKE METROPOLITAN AREA (LOCATION QUOTIENTS)
1958-1962

	Category	1958 Ratio	1958 L.Q.	1959 Ratio	1959 L.Q.	1960 Ratio	1960 L.Q.	1961 Ratio	1961 L.Q.	1962 Ratio	1962 L.Q.
I.	Agriculture										
	% O.M.A.	4.4	2.20	4.0	2.22	3.8	2.11	3.5	2.19	3.6	2.25
	% S.L.M.A.	2.0		1.8		1.8		1.6		1.6	
II.	Mining and Mineral Production										
	% O.M.A.	0.1	0.02	0.1	0.02	0.1	0.02	0.1	0.02	0.1	0.02
	% S.L.M.A.	4.9		4.2		4.7		4.7		4.4	
III.	Manufacturing										
	% O.M.A.	9.8	0.64	9.4	0.65	9.4	0.64	9.6	0.68	9.3	0.69
	% S.L.M.A.	15.2		14.4		14.7		14.2		13.4	
IV.	Defense										
	% O.M.A.	31.6	26.33	32.4	14.73	32.5	11.61	32.0	8.65	30.0	5.45
	% S.L.M.A.	1.2		2.2		2.8		3.7		5.5	
V.	Government										
	% O.M.A.	14.9	0.98	14.7	0.96	14.8	0.99	15.6	1.00	18.3	1.20
	% S.L.M.A.	15.2		15.3		15.0		15.6		15.3	
VI.	Construction										
	% O.M.A.	4.5	0.71	4.6	0.71	4.4	0.75	4.6	0.79	4.2	0.68
	% S.L.M.A.	6.3		6.5		5.9		5.8		6.2	
VII.	Transportation, Communication and Utilities										
	% O.M.A.	10.0	0.98	9.9	1.02	9.5	1.03	8.8	0.97	8.3	0.97
	% S.L.M.A.	10.2		9.7		9.2		9.1		8.6	
VIII.	Wholesale and Retail Trade										
	% O.M.A.	15.1	0.58	15.3	0.58	15.9	0.60	15.9	0.61	15.9	0.61
	% S.L.M.A.	26.1		26.6		26.5		26.0		25.9	
IX.	Finance, Insurance and Real Estate										
	% O.M.A.	2.1	0.35	2.2	0.36	2.2	0.36	2.2	0.37	2.4	0.41
	% S.L.M.A.	6.0		6.1		6.1		6.0		5.9	
X.	Services										
	% O.M.A.	7.6	0.60	7.3	0.55	7.4	0.56	7.6	0.57	7.9	0.59
	% S.L.M.A.	12.8		13.3		13.2		13.3		13.3	

Source: Derived from the data in Tables 22 and 23.

Manufacturing and Services the concentration in employment by category is lower in Provo. (Agricultural employment in Salt Lake is too small to provide a meaningful comparison). The comparison between Provo and Ogden yields mixed results because of Ogden's Transportation and Utilities. In the other categories, except for Services and Manufacturing, the pattern is similar. However, again, Agriculture is not significant in Provo.

It might parenthetically be added with respect to Table 24, that in all cases except Defense and Agriculture, employment concentration in the Salt Lake Metropolitan Area is equal to or greater than the concentration in Ogden. As noted in the earlier studies in this series, Defense is the Ogden Metropolitan Area's major export industry with some assistance from Transportation and Communications.

An examination of the diversification indexes for the period of projection indicates, until the 1980 period, a growing concentration in the leading categories. The Diversification Index for the Provo Metropolitan Area is much higher than for the State and the United States, indicating a greater degree of concentration. The reason for this is the predominant importance of Manufacturing. The DI's for Utah show a steady upward trend towards the same level of concentration as the United States. There is little variation in the United States' DI's which reflects the relative stability of the largest employment categories, the ranking of the top five showing only two changes in the fifth position during the base period and the period of extrapolation.

SECTION IV

POPULATION PROJECTIONS

As a background for the population projections of the Provo Metropolitan Area and the State of Utah, a brief summary of some of the relevant population data of these areas will be given.

Historical Population Growth

The rate of population growth in the Provo Metropolitan Area and Utah has varied considerably since the turn of the century. Both the actual population and the relative change for each decade since 1900 for these two areas and the United States are given in Table 25. It is seen that in the Provo Metropolitan Area the population gain was only moderate between 1900 and 1920, increasing 26 per cent. However, between 1920 and 1940, the rate of growth increased some with a gain of 41 per cent. During and following World War II, this area experienced very rapid growth with total population nearly doubling (a gain of 86 per cent) between 1940 and 1960.

A somewhat different pattern prevailed for the State of Utah during this period. Between 1900 and 1920 the State's population increased 62 per cent; between 1920 and 1940, only 22.5 per cent; and from 1940 to 1960, back up to a gain of 62 per cent.

The pattern of relative increase in the Nation's population was roughly the same as that of Utah but generally lower. Between 1900 and 1920, the gain was 39 per cent--higher than the Provo Metropolitan Area but much lower than Utah. In the two decades of 1920 to 1940, the United States' gain of 24.5 per cent was about

the same as Utah but below Provo. In the war and postwar decades of 1940 to 1960, the United States' gain of 35.5 per cent was much below both Utah and the Provo Metropolitan Area.

TABLE 25

POPULATION GROWTH, PROVO METROPOLITAN AREA
UTAH AND UNITED STATES, 1900 to 1960

Date	Provo Metropolitan Area		Utah		United States[a]	
	Number	Index	Number	Index	Number	Index
1900	32,456	100	276,749	100	76,212,168	100
1910	37,942	117	373,351	135	92,228,496	121
1920	40,792	126	449,396	162	106,021,647	139
1930	49,021	151	507,847	184	123,202,624	162
1940	57,382	177	550,310	199	132,164,569	173
1950	81,912	252	688,862	249	151,325,798	198
1960	106,991	330	890,627	322	179,323,175	235

[a]Includes Alaska and Hawaii in all years.

Source: U. S. Bureau of the Census

An important consequence of the above patterns of population growth is that the Provo Metropolitan Area has maintained about the same share of the State's population, with some decline in the decades before World War II, and also that Utah's population is becoming a larger share of the nation. These changes are given in Table 26. It is seen that the Provo Metropolitan Area decreased from 11.7 per cent of Utah's population in 1900 to 9.1 per cent in 1920, and then steadily increased to 12.0 per cent in 1960.

Utah's share of the nation's population increased from 0.36 per cent in 1900 to an even 0.50 per cent in 1960, with almost no change from 1910 to 1940. It is of some interest to note that since 1910 Utah's share of the population in the eight Mountain States has remained virtually constant at about 13.5 per cent. The smaller increases in several of these states are offset by the larger increases in such states as Arizona and Nevada.

TABLE 26

RELATIVE IMPORTANCE OF POPULATION IN THE PROVO METROPOLITAN AREA AND UTAH, 1900 to 1960

Census Date	Provo Metropolitan Area as Per Cent of Utah	Utah as a Per Cent of	
		Mountain States	United States
1900	11.7	16.5	0.36
1910	10.2	14.2	0.40
1920	9.1	13.5	0.42
1930	9.7	13.7	0.41
1940	10.4	13.3	0.42
1950	11.9	13.5	0.46
1960	12.0	13.1	0.50

Source: Computed from U. S. Bureau of Census data.

Closely correlated with population growth patterns described above are the changes in net migration for Utah. It is seen in Table 27 that in the two decades preceding World War II when population in Utah was increasing very slowly, net out-migration was substantial. In the other decades when population was increasing the most, there was net in-migration in Utah.

TABLE 27

NET MIGRATION OF TOTAL RESIDENT POPULATION IN UTAH
1900 to 1960

Decade	Net Migration
1900-1910	+24,900
1910-1920	- 200
1920-1930	-30,800
1930-1940	-30,500
1940-1950	+ 9,000
1950-1960	+10,000

Source: Decades 1950-1960 and 1940-1950 from U. S. Bureau of Census, Current Population Reports, p. 25, No. 227, April 26, 1961; all prior decades from U. S. Census Bureau, Historical Statistics of the United States, p. 45.

Unless offset by net out-migration, the birth rates and death rates would produce a more rapidly growing population in Utah than in the nation. It is seen in Table 28 that the birth rates in Utah are consistently higher than those for the United States and that the death rates are consistently lower.

TABLE 28

BIRTH AND DEATH RATES IN UTAH AND UNITED STATES
SELECTED YEARS, 1910 to 1960

Year	Birth Rate		Death Rate	
	Utah	U. S.	Utah	U. S.
1910	30.7	30.1	10.8	14.7
1920	31.2	27.7	11.5	13.0
1930	25.5	21.3	9.9	11.3
1940	25.2	19.4	8.8	10.8
1950	31.1	24.1	7.2	9.6
1955	31.5	25.0	6.6	9.3
1960	29.2	23.6	6.9	9.5

Source: U. S. Bureau of the Census, Historical Statistics of the United States and Statistical Abstract of the United States.

The relationship between population growth and employment opportunities is clearly evident in the above relative rates of population growth for Utah and the Provo Metropolitan Area. In the two decades prior to World War II, for example, when there was not much expansion of industrial activities in these areas, there was net out-migration of population (many of whom were young people), and consequently, with a scarcity of jobs, the population growth of Utah was slowed down considerably. The Provo Metropolitan Area fared a little better because of the steady shift of population from rural areas to urban areas and the growth of the Brigham Young University.

The impact of World War II on the whole Utah economy, but especially on the Wasatch Front area, is well known. Thousands of new jobs resulted from the war-stimulated activities, net in-migration of population occurred and population growth increased markedly. The rise and expansion of the missile industry and related activities in Utah have continued the growth in jobs and population, although a plateau appears to have been reached and even some cutbacks are now being made.

The postwar expansion has been of such magnitude as to keep the rate of unemployment during most of the years between 1952 and 1962 in Utah below that of the United States. However, this situation has not been true in the Provo area. In Table 29 it is seen that in nine of eleven years the unemployment rate in the Provo Metropolitan Area was above that of the United States and in all of the years was above the rate in Utah. At the same time, the rate in Utah was below that of the Nation in nine of the eleven years.

Improvement in the unemployment situation in the Provo area, and continuation of the favorable comparisons for the State, will depend largely upon the ability of the Provo area and the State to generate new jobs.

TABLE 29

AMOUNT AND RATE OF UNEMPLOYMENT IN THE PROVO METROPOLITAN AREA
UTAH AND UNITED STATES, 1952-1962

Year	Provo Metropolitan Area			Utah			United States		
	Civilian Labor Force	Unemployment		Civilian Labor Force	Unemployment		Civilian Labor Force	Unemployment	
		Amount	Rate		Amount	Rate	(000 omitted)	Amount	Rate
1952	25,437	1,360	5.3	279,000	8,600	3.1	62,966	1,931	3.1
1953	26,763	1,093	4.1	282,000	9,000	3.2	63,815	1,870	2.9
1954	26,834	1,659	6.2	278,200	14,000	5.0	64,468	3,578	5.6
1955	29,174	1,175	4.0	291,200	11,500	3.9	65,847	2,903	4.4
1956	30,071	1,360	4.5	297,100	10,000	3.4	67,530	2,822	4.2
1957	31,518	1,160	3.7	303,400	10,900	3.6	67,947	2,936	4.3
1958	31,823	2,682	8.4	311,100	16,200	5.2	68,647	4,681	6.8
1959	32,591	2,160	6.6	324,500	14,400	4.4	69,695	3,830	5.5
1960	33,371	2,520	7.6	333,200	15,400	4.6	70,612	3,931	5.6
1961	33,337	2,892	8.7	344,500	17,300	5.0	71,603	4,806	6.7
1962	33,749	2,690	8.0	356,800	15,900	4.5	71,853	4,007	5.6

Source: Labor force--Tables 1, 2 and 3; Unemployment--U. S. Department of Labor and Utah Department of Employment Security.

Population Projections

As stated at the beginning of the report, this study makes the assumption that the ultimate population size of a given region will be determined by the demand for labor within that region, i.e., the number of jobs available in the basic industries and non-service governmental activities together with the ancillary jobs in the various service industries that arise in connection with basic industry employment. Hence, with an estimate of the total number of workers that a region can sustain and an estimate of the labor force/population ratio, it is a simple matter to estimate the total population of the region. The quality of the population estimates depends primarily, of course, on the accuracy of the employment estimates.

As also noted at the beginning of the report, this approach disregards short run cyclical fluctuations and is applicable only to periods of time of sufficient duration that the growth factors inherent in a region's economy can work themselves out.

Table 30 gives the population estimates for each five-year period to 1980 for all three levels of government and also gives the essential data for the determination of the estimates.

The second column in this table, headed "Classified Employees," is derived from Tables 18, 19 and 20 in Section III. These three tables summarize the estimates of classified employees for the three-year interval from 1962 to 1965 and each five-year interval from 1965 to 1980. One difference should be noted between Table 30 and the above three tables. Table 30 begins with the year 1960--not the "Base Year" of 1962 or the average of 1961 and 1962. It was believed that for the purpose of relating workers to population it was better to make the projections from the census year of 1960 rather than the "Base Year." As a starting point for estimating classified employees, "Base" figures were more relevant than 1960 figures.

TABLE 30

ESTIMATED CIVILIAN POPULATION, PROVO METROPOLITAN AREA, UTAH AND UNITED STATES
1965, 1970, 1975 and 1980

Year	Classified Employees	Ratio Non-Classified	Civilian Labor Force	Population Multipliers	Civilian Population
			Provo Metropolitan Area[a]		
1960	27,490	21.4%	33,370	2.90	106,990[b]
1965	29,810	22.0	36,370	2.90	120,470
1970	33,710	22.0	41,130	2.90	137,280
1975	38,170	22.0	46,570	2.90	157,050
1980	42,050	22.0	51,300	2.90	170,770
			Utah		
1960	285,900	16.6%	333,200	2.69	897,000[c]
1965	322,800	17.0	377,700	2.68	1,012,200
1970	373,200	17.0	436,600	2.67	1,165,700
1975	424,100	17.0	496,200	2.66	1,319,900
1980	486,500	17.0	569,200	2.65	1,508,400
			United States		
1960	60,070	17.5%	70,612	2.52	178,144[c]
1965	62,973	18.5	74,623	2.54	189,542
1970	68,321	18.5	80,960	2.56	207,258
1975	73,973	18.5	87,658	2.58	226,158
1980	79,772	18.5	94,530	2.60	245,778

[a]Population of the Provo Metropolitan Area is the product of the labor force and the multiplier plus the number of students at Brigham Young University.

[b]U. S. Census, 1960

[c]July 1, 1960

Source: Based largely on data in Tables 1, 2, 3, 16, 18, 19 and 20

The estimates of classified employees in column two of Table 30 are, of course, the end product of the greater part of this study.

As discussed in the last two or three pages of Section II, some 15 to 23 per cent of the civilian labor force is not included in total classified employees. Hence, the third column, "Ratio Non-classified," is the percentage addition to the number of classified employees to account for the self-employed and unpaid family workers, private household workers, unemployed, and an adjustment for multiple job holding and other discrepancies. Inasmuch as there is little basis for any predictable change in this group as a percentage of total, it is assumed that this group will remain a constant percentage of the classified employees for each level of government. The approximate average percentage of 1959 to 1962 for each of the three levels of government is used and is applied to total classified employees to obtain the civilian labor force for each level in column four.

The population multipliers in column five are based on the relationship between civilian labor force and civilian population in the decade of the 1950's, as shown in Table 16 above, and the anticipated trends in this relationship. The three multipliers for 1960 are taken directly from Table 16.

Since the Provo Metropolitan Area is expected to include about the same percentage of the State's population in the period to 1980, the multiplier is held constant throughout the projection period. The rural population in Utah is expected to continue to show a relative decline--if not absolute--to total State population; hence, because the average size of the family can be expected to continue to drop some, the multiplier is decreased slightly. The multiplier for the United States has shown a steady increase due perhaps to a rising share of

older people in the population, higher real income, etc.; and some further increase is expected.

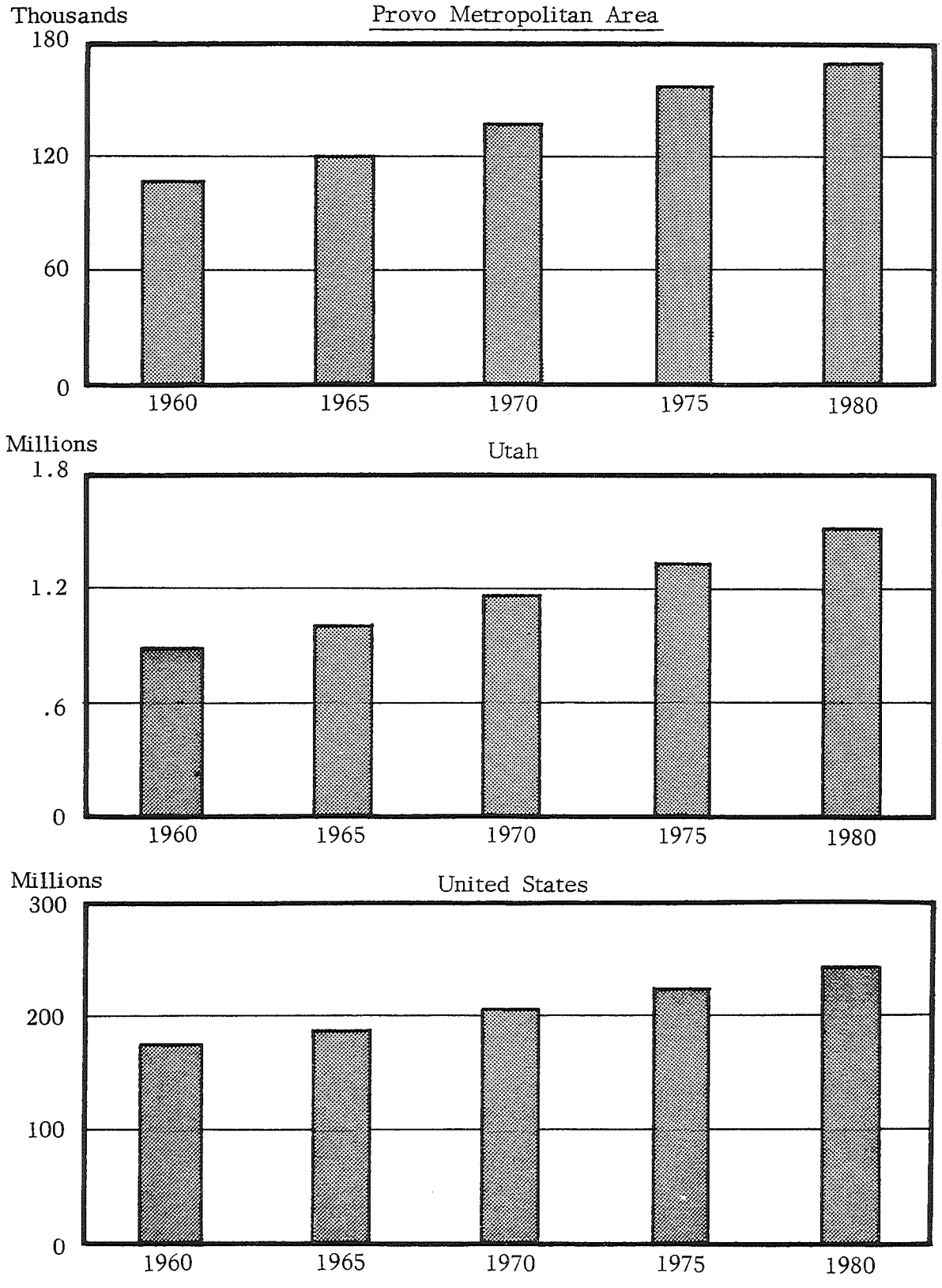
The product of the civilian labor force and the population multipliers gives the estimated population shown in the last column of Table 30, for 1965, 1970, 1975 and 1980 for the Provo Metropolitan Area, Utah and the United States. Chart 3 shows graphically these population projections. Although the population of the Provo Metropolitan Area increased more rapidly than that of the State of Utah from 1940 to 1960, the rate of increase for 1960 to 1980 is expected to be nearly the same as the State. The populations of both the Provo Metropolitan Area and Utah are projected to gain more rapidly than the Nation.

These relative changes are readily seen in Table 31. Civilian population in the Provo Metropolitan Area is estimated to increase 60 per cent between 1960 and 1980--rising from 106,990 to 170,800--and to remain at about 12 per cent of the State's population, dropping to 11 per cent in 1980. Utah's estimated population increases from 987,000 in 1960 to about 1.5 million in 1980, a gain of 68 per cent, and rises from 0.50 per cent of the Nation's population in 1960 to 0.61 per cent in 1980. The civilian population of the United States is estimated to increase from 178.1 million in 1960 to 245.8 million in 1980, a gain of 38 per cent. These differential rates of growth are clearly seen in Chart 4.

It should be noted, of course, that the population estimates in Table 30 refer to civilian population. To get the total resident population of each level of government it is necessary to make some estimate of the number in the armed forces in each area. This factor will have virtually no influence on the population of the Provo Metropolitan Area. For the State as a whole, the number of armed

Chart 3

ESTIMATED CIVILIAN POPULATION PROVO METROPOLITAN AREA
UTAH AND UNITED STATES 1965, 1970, 1975 and 1980

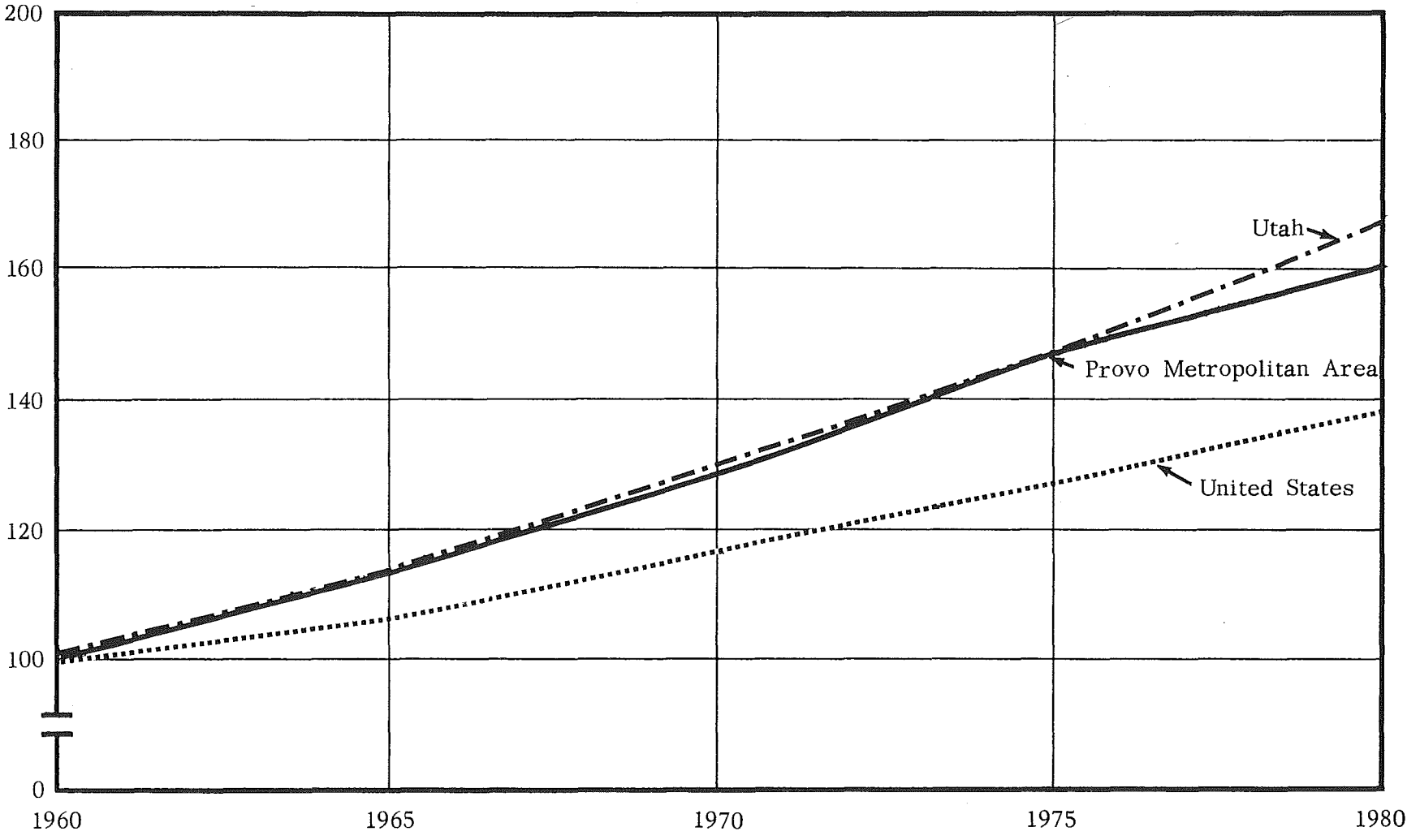


Source: Table 30

CHART 4

INDEX OF ESTIMATED CIVILIAN POPULATION GROWTH

Provo Metropolitan Area, Utah, and United States 1965, 1970, 1975, 1980



Source: Table 31

forces personnel has been between three and five thousand during most of the last decade and only three to four thousand in the last five years. For the United States, the number in the armed forces has averaged 1,947,000 in the last decade. However, in the last three years, the number of armed forces personnel has been a little higher, averaging 2,038,000.

TABLE 31

RELATIVE INCREASES IN CIVILIAN POPULATION, PROVO METROPOLITAN AREA, UTAH AND UNITED STATES 1965, 1970, 1975 and 1980

Year	Provo Metropolitan Area		Utah		U.S.
	Index	Per Cent of Utah	Index	Per Cent of U.S.	Index
1960	100	12	100	0.50	100
1965	113	12	113	0.53	106
1970	128	12	130	0.56	116
1975	147	12	147	0.58	127
1980	160	11	168	0.61	138

Source: Computed from data in Table 30.

Perhaps the most reasonable assumption to make with respect to this element of the total resident population is that the number in the armed forces will remain about constant for each of the three levels of government--i.e., practically none in the Provo Metropolitan Area, 3,000 or 4,000 in the State, and about 2 million in the United States.

After arriving at the estimates of civilian population in Table 30, solely on the basis of the estimated number of workers that seemed reasonable for each level of government, the results were compared with various other estimates independently made. These comparisons are shown in Table 32. The population estimates of this study for the Provo Metropolitan Area are very close to the estimates derived from a straight-line projection at an annual growth rate of 2.5 per cent to 1975. The straight-line projection for 1980 is higher than this study because the latter assumes a slowing down in the expansion of jobs. However, the population estimates of this study for Utah are a little higher than most of the other estimates--two of which were made several years ago--U. S. Bureau of the Census, 1957, and the Stanford Research Institute, 1955. The estimates of this study are a little higher than the middle projections made in 1960 for the U.S. Senate Select Committee on National Water Resources. This was the only available estimate for 1980.

For the United States, four series of population estimates made by the U.S. Bureau of the Census in 1964 and three series in the special estimates made by the Census Bureau in 1960 are available for comparison with those of this study. It is interesting to note that for three of the four years--1970, 1975, and 1980--the estimates of this study are almost exactly the same as Series B of the Census Bureau series. For 1965, the figure is somewhat below the lowest of the Census Bureau projections. In comparison with the special Census Bureau projections in 1960 the estimates of this study were nearly identical to the middle series of the Census Bureau for both 1970 and 1980. It should be remembered, of course, that the estimates of this study include civilian population only and would be about two

TABLE 32

COMPARISON OF OTHER POPULATION ESTIMATES WITH THOSE OF THIS STUDY, 1965, 1970, 1975 and 1980

Year	Provo Metropolitan Area				
	This Study	Projection of 1960 Population at Annual Growth Rate of[a]			
		2 Per Cent	2.25 Per Cent	2.5 Per Cent	2.75 Per Cent
1965	120,500	118,100	119,600	121,000	122,500
1970	137,300	130,400	133,700	137,000	140,300
1975	157,100	144,000	149,400	155,000	160,700
1980	170,800	159,000	167,000	175,300	184,100

Year	Utah (thousands)[b]								
	This Study	U. S. Bureau of the Census[c]				Stanford Research[d]	Special U. S. Census[e]		
		1	2	3	4		Low	Middle	High
1965	1,012	1,024	977	978	953	986	---	---	---
1970	1,166	1,151	1,114	1,082	1,031	1,099	1,105	1,138	1,220
1975	1,320		1,247			1,239	---	---	---
1980	1,508	---	---	---	---	---	1,304	1,414	1,610

Year	United States (millions)							
	This Study	U. S. Bureau of the Census[f]				Special U. S. Census[e]		
		A	B	C	D	Low	Middle	High
1965	189.5	195.1	194.7	194.1	194.1	---	---	---
1970	207.3	211.4	209.0	206.1	205.9	201.0	207.0	221.9
1975	226.2	230.4	225.9	220.1	218.9	---	---	---
1980	245.8	252.1	245.3	236.5	233.1	224.9	243.8	277.6

[a]Since no independent estimates are available, this method of a straight percentage increase provides a rough check on the projections of this study.

[b]In addition to the population estimates for Utah shown below, see also those prepared by the University of Utah Bureau of Economic and Business Research, Utah Economic and Business Review, University of Utah, December 1957, p. 2 and January 1958, p. 6.

[c]Current Population Reports, P-25, No. 160, August 9, 1957; the single figure for 1975 is an unpublished estimate prepared for the U. S. Bureau of Public Roads. Includes members of the armed forces.

[d]Howard C. Nielsen, Population Trends in the United States Through 1975 (Stanford Research Institute, Menlo Park, California, 1955).

[e]Select Committee on National Water Resources, U. S. Senate, Water Resources Activities in the United States, Population Projections and Economic Assumptions, Committee Print No. 5, March 1960. Alaska and Hawaii not included in the U. S. totals.

[f]Current Population Reports, P-25, No. 279, February 4, 1964.

million higher (assuming the average number of recent years) if members of the armed forces stationed in the United States were included.

On the whole, the writers feel that the above comparisons provide substantial verification of the basic assumption that the population of a given region is largely determined by the number of jobs available and of the techniques employed in the estimating procedures. The fact that the population estimates of this study generally fell within the range, and usually near midpoint of the estimates made by the standard population projection procedures gives added significance to the results obtained in this study. The population estimates for Utah, although a little higher than several other projections, are believed to be close enough to such estimates to be satisfactory.

APPENDIX

APPENDIX I

GROWTH RATES FOR PROVO METROPOLITAN AREA, UTAH, AND UNITED STATES
1953 to 1962

Provo Metropolitan Area Growth Rates

Category	Year From \ Year to	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	Averages
I. Agriculture	1952	-2.2	-3.8	-1.9	-1.2	-2.9	-2.7	-2.9	-2.8	-3.2	-2.5	
	1953		-5.4	-1.7	-0.8	-3.1	-2.7	-3.0	-2.5	-3.3	-2.6	
	1954			+2.1	+1.5	-2.3	-2.1	-2.5	-2.5	-3.0	-2.2	$\overline{X}$ = -2.80
	1955				+1.0	-4.5	-3.4	-3.6	-3.4	-3.8	-2.8	$\overline{X}$*= -2.36
	1956					-9.6	-5.6	-5.1	-4.5	-4.7	-3.4	
	1957						-1.3	-2.8	-2.7	-3.4	-2.2	
	1958							-4.2	-3.4	-4.1	-2.4	
	1959								-2.5	-4.1	-1.7	
	1960									-5.7	-1.3	
	1961										+3.2	
II. Mining and Mineral Production	1952	+6.1	+4.5	+8.4	+8.9	+6.5	+4.1	--	+2.7	+4.8	+3.3	
	1953		+2.9	+9.5	+9.9	+6.5	+3.7	-1.0	+2.2	+4.7	+3.0	
	1954			+16.8	+13.6	+7.8	+4.0	-1.7	+2.1	+4.9	+3.0	$\overline{X}$ = +3.20
	1955				+10.4	+3.5	--	-5.9	-0.7	+3.1	+1.2	$\overline{X}$*= +3.43
	1956					-2.9	-4.8	-10.8	-3.2	+1.7	-0.2	
	1957						-6.7	-14.5	-3.3	+2.9	+0.3	
	1958							-21.6	-1.6	+6.3	+2.1	
	1959								+23.5	+23.7	+11.5	
	1960									+24.0	+6.0	
	1961										-9.3	
III. Manufacturing	1952	+14.0	+2.3	+7.0	+6.6	+5.5	+2.1	+0.4	+1.6	+1.0	+0.3	
	1953		-8.1	+3.7	+4.3	+3.5	-0.1	-1.7	-0.1	-0.5	-1.1	
	1954			+17.1	+11.1	+7.7	+2.0	-0.4	+1.3	+0.7	-0.2	X = +0.04
	1955				+5.4	+3.2	-2.5	-4.4	-1.6	-1.8	-2.4	$\overline{X}$*= -0.17
	1956					+1.1	-6.3	-7.4	-3.2	-3.2	-3.7	
	1957						-13.1	-11.4	-4.7	-4.3	-4.6	
	1958							-9.7	-0.1	-1.1	-2.3	
	1959								+10.4	+3.4	+0.2	
	1960									-3.2	-4.5	
	1961										-5.8	

APPENDIX I (Cont'd)

Provo Metropolitan Area Growth Rates

Category	Year From \ Year to	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	Averages
IV. Defense	1952											
	1953											
	1954											
	1955											
	1956	No meaningful changes - employment to small.										
	1957											
	1958											
	1959											
	1960											
	1961											
V. Government	1952	+6.2	+6.6	+6.2	+6.6	+6.0	+5.8	+4.8	+5.8	+5.4	+5.2	
	1953		+7.0	+6.2	+6.7	+6.0	+5.7	+4.6	+5.7	+5.3	+5.1	
	1954			+5.5	+6.5	+5.7	+5.4	+4.1	+5.5	+5.1	+4.8	$\overline{X}$ = +5.29
	1955				+7.6	+5.7	+5.4	+3.8	+5.5	+5.0	+4.7	$\overline{X}$*= +5.28
	1956					+4.0	+4.3	+2.6	+5.0	+4.5	+4.3	
	1957						+4.5	+2.2	+5.3	+4.6	+4.3	
	1958							-0.7	+5.7	+4.7	+4.3	
	1959								+12.4	+7.5	+6.8	
	1960									+2.8	+7.7	
	1961										+3.0	
VI. Construction	1952	+0.3	-5.4	+4.6	+11.4	+8.1	-0.1	+0.9	+2.4	+0.3	+2.7	
	1953		-10.8	+6.8	+15.3	+10.2	-0.2	+0.9	+2.7	+0.3	+3.0	
	1954			+27.9	+31.2	+18.2	+2.7	+3.5	+4.3	+2.0	+4.9	$\overline{X}$ = +2.45
	1955				+34.6	+13.7	-4.6	-1.9	+1.1	-1.8	+1.9	$\overline{X}$*= +1.83
	1956					-4.0	-19.7	-11.7	-5.9	-7.8	-2.7	
	1957						-32.8	-15.2	-6.5	-8.7	-2.4	
	1958							+6.9	+10.3	+1.1	+7.1	
	1959								+13.8	-1.7	+7.2	
	1960									-15.1	+4.1	
	1961										+27.6	

APPENDIX I (Cont'd)

Provo Metropolitan Area Growth Rates

Category	Year From \ Year to 1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	Averages
VII. Transportation, Communication & Utilities	1952 +7.4	+1.1	+3.4	-0.2	-1.1	-0.2	-0.8	-1.2	-1.7	-1.4	
	1953 -4.9	+1.5	-2.6	-3.2	-1.7	-2.1	-2.3	-2.7	-2.3		
	1954	+8.3	-1.5	-2.6	-0.9	-1.6	-1.9	-2.4	-2.0		$\bar{X}$ = -1.91
	1955		-10.4	-7.6	-3.8	-3.9	-3.8	-4.1	-3.4		$\bar{X}^*$ = -2.18
	1956			-4.7	-0.3	-1.7	-2.1	-2.8	-2.2		
	1957				+4.4	-0.1	-1.2	-2.3	-1.7		
	1958					-4.4	-3.9	-4.4	-3.1		
	1959						-3.4	-4.5	-2.7		
	1960							-5.6	-2.4		
	1961								+0.9		
VIII. Wholesale and Retail Trade	1952 +1.5	+0.2	+1.9	+3.3	+3.5	+2.9	+3.0	+2.8	+2.2	+2.2	
	1953 -1.1	+2.1	+3.9	+3.9	+3.2	+3.5	+3.0	+2.3	+2.3		
	1954	+5.3	+6.5	+5.7	+4.3	+4.1	+3.7	+2.8	+2.7		$\bar{X}$ =+2.54
	1955		+7.8	+5.9	+3.9	+3.8	+3.4	+2.4	+2.4		$\bar{X}^*$=+2.53
	1956			+3.9	+2.0	+2.5	+2.3	+1.3	+1.5		
	1957				+0.2	+1.8	+1.8	+0.7	+1.0		
	1958					+3.5	+2.6	+0.9	+1.2		
	1959						+1.8	-0.4	+0.1		
	1960							-2.5	-0.1		
	1961								+2.4		
IX. Finance, Insurance, and Real Estate	1952 +3.7	+6.6	+13.1	+12.0	+8.9	+7.9	+7.6	+6.7	+5.5	+5.5	
	1953	+9.5	+18.1	+14.9	+10.3	+8.7	+8.2	+7.1	+5.8	+5.7	
	1954		+27.4	+17.7	+10.5	+8.5	+8.0	+6.8	+5.2	+5.2	$\bar{X}$ =+5.67
	1955			+8.8	+3.0	+2.9	+3.5	+3.1	+2.0	+2.4	$\bar{X}^*$=+4.93
	1956				-2.5	+0.1	+1.9	+1.7	+0.6	+1.3	
	1957					+2.8	+4.2	+3.1	+1.4	+2.1	
	1958						+5.7	+3.3	+1.0	+2.0	
	1959							+0.9	-1.3	+0.7	
	1960								-3.4	+0.7	
	1961									+4.9	

APPENDIX I (Cont'd)

Provo Metropolitan Area Growth Rates

Category	Year From \ Year to 1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	Averages
X. Services	1952	+8.5	+11.5	+11.1	+10.7	+11.5	+10.7	+10.8	+10.5	+9.9	+9.5	
	1953		+14.6	+12.4	+11.4	+12.3	+11.2	+11.2	+10.8	+10.0	+9.6	
	1954			+10.2	+9.8	+11.6	+10.3	+10.5	+10.1	+9.4	+9.2	$\bar{X}$ = +9.81
	1955				+9.5	+12.2	+10.3	+10.6	+10.1	+9.3	+8.8	$\bar{X}$*= +9.89
	1956					+15.1	+10.8	+11.0	+10.3	+9.2	+8.7	
	1957						+6.6	+9.0	+8.8	+7.8	+7.4	
	1958							+11.5	+9.8	+8.2	+7.6	
	1959								+8.2	+6.7	+6.4	
	1960									+5.1	+5.4	
	1961										+5.8	
Services Less Educational Services	1952	+7.5	+11.4	+10.9	+10.7	+10.8	+8.4	+7.8	+8.3	+8.0	+7.9	
	1953		+15.4	+12.7	+11.8	+11.6	+8.6	+7.9	+8.5	+8.0	+7.9	
	1954			+10.1	+10.1	+10.4	+7.0	+6.4	+7.3	+7.0	+7.0	$\bar{X}$ = +7.70
	1955				+10.0	+10.5	+6.0	+5.5	+6.8	+6.5	+6.6	$\bar{X}$*= +7.22
	1956					+11.0	+4.1	+4.1	+6.0	+5.8	+6.0	
	1957						-2.5	+0.7	+4.4	+4.5	+5.1	
	1958							+4.0	+8.0	+7.0	+7.0	
	1959								+12.1	+8.5	+8.1	
	1960									+5.1	+6.1	
	1961										+7.1	
TOTAL - ALL CATEGORIES	1952	+6.6	+2.4	+5.2	+5.6	+4.9	+3.2	+2.6	+2.9	+2.6	+2.6	
	1953		-1.8	+4.4	+5.3	+4.4	+2.5	+2.0	+2.7	+2.2	+2.1	
	1954			+11.0	+8.9	+6.6	+3.6	+2.7	+3.4	+2.7	+2.6	$\bar{X}$ = +2.46
	1955				+7.0	+4.4	+1.3	+0.8	+2.0	+1.4	+1.5	$\bar{X}$*= +2.41
	1956					+1.9	-1.4	-1.2	+0.8	+0.3	+0.6	
	1957						-4.7	-2.7	+0.4	-0.1	+0.4	
	1958							-0.7	+3.0	+1.5	+1.7	
	1959								+6.9	+2.7	+2.5	
	1960									-1.4	+0.3	
	1961										+2.1	

$\bar{X}$ = Mean of all growth rates for the category.
$\bar{X}$*= Mean of growth rates adjusted to eliminate extreme variations.

APPENDIX I (Cont'd)

Utah Growth Rates

Category	Year From \ Year to 1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	Averages
I. Agriculture	1952 +2.3	-1.5	-0.3	-1.3	-1.9	-1.8	-2.0	-2.2	-2.5	-2.0	
	1953	-5.2	-1.6	-2.4	-3.0	-2.7	-2.7	-2.7	-3.0	-2.5	
	1954		+2.0	-1.0	-2.2	-2.0	-2.2	-2.3	-2.7	-2.1	$\bar{X}$ = -2.38
	1955			-4.0	-4.3	-3.3	-3.3	-3.1	-3.5	-2.7	$\bar{X}^*$= -2.39
	1956				-4.6	-3.0	-3.0	-2.9	-3.4	-2.5	
	1957					-1.4	-2.2	-2.4	-3.1	-2.0	
	1958						-3.0	-2.9	-3.7	-2.2	
	1959							-2.7	-4.0	-1.9	
	1960								-5.2	-1.5	
	1961									+2.3	
II. Mining and Mineral Production	1952 +1.3	-1.4	+1.9	+3.8	+3.7	+0.7	-0.9	+0.3	+0.2	-0.3	
	1953	-4.0	+2.2	+4.6	+4.4	+0.6	-1.3	+0.1	+0.04	-0.5	
	1954		+8.9	+9.3	+7.3	+1.8	-0.7	+0.9	+0.6	-0.04	
	1955			+9.7	+6.6	-0.4	-3.0	-0.7	-0.7	-1.3	$\bar{X}$ = -0.17
	1956				+3.5	-5.1	-6.8	-3.1	-2.6	-3.0	$\bar{X}^*$= -0.19
	1957					-13.0	-11.6	-5.2	-4.1	-4.2	
	1958						-10.2	-1.0	-0.9	-1.9	
	1959							+9.1	+4.1	+1.1	
	1960								-0.6	-2.7	
	1961									-4.7	
III. Manufacturing	1952 +5.0	+0.6	+3.0	+3.8	+3.6	+1.9	+1.4	+2.0	+1.8	+1.9	
	1953	-3.6	+1.9	+3.4	+3.2	+1.3	+0.8	+1.5	+1.4	+1.6	
	1954		+7.8	+7.1	+5.6	+2.6	+1.7	+2.4	+2.2	+2.3	
	1955			+6.3	+4.5	+0.9	+0.3	+1.4	+1.3	+1.5	$\bar{X}$ = +1.75
	1956				+2.7	-1.7	-1.7	+0.2	+0.3	+0.7	$\bar{X}^*$= +1.83
	1957					-5.9	-3.8	-0.6	-0.3	+0.3	
	1958						-1.8	+2.1	+1.6	+1.9	
	1959							+6.1	+3.3	+3.2	
	1960								+0.6	+1.7	
	1961									+2.9	

APPENDIX I (Cont'd)

Utah Growth Rates

Category	Year From \ Year to 1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	Averages
IV. Defense	1952 -21.7	-17.4	-11.4	-9.0	-7.3	-4.9	-1.9	-0.5	+0.5	+1.7	
	1953	-12.8	-5.8	-4.3	-3.3	-1.1	+1.9	+2.9	+3.7	+4.7	
	1954		+1.7	+0.3	+0.03	+2.0	+5.1	+5.8	+6.3	+7.1	
	1955			-1.1	-0.8	+2.1	+6.0	+6.6	+7.1	+7.9	
	1956				-0.5	+3.8	+8.5	+8.7	+8.8	+9.5	$\bar{X}$ = 3.35
	1957					+8.2	+13.3	+11.9	+11.3	+11.6	$\bar{X}$*= 4.20
	1958						+18.6	+13.8	+12.3	+12.4	
	1959							+9.2	+9.3	+10.4	
	1960								+9.4	+11.0	
	1961									+12.7	
V. Government	1952 +14.4	+6.4	+4.7	+4.5	+5.1	+5.1	+5.2	+5.2	+5.3	+5.3	
	1953	-1.0	+0.1	+1.4	+2.8	+3.3	+3.7	+3.9	+4.3	+4.3	
	1954		+1.2	+2.7	+4.2	+4.5	+4.7	+4.8	+5.0	+5.0	
	1955			+4.1	+5.7	+5.6	+5.5	+5.5	+5.7	+5.6	$\bar{X}$ = 4.99
	1956				+7.2	+6.2	+6.0	+5.8	+6.0	+5.8	$\bar{X}$* = 5.20
	1957					+5.4	+5.4	+5.4	+5.7	+5.5	
	1958						+5.4	+5.4	+5.8	+5.5	
	1959							+5.4	+6.0	+5.6	
	1960								+6.6	+5.7	
	1961									+4.8	
VI. Construction	1952 -4.9	-1.7	+6.7	+7.3	+4.7	+4.0	+4.2	+2.9	+3.2	+4.2	
	1953	+1.6	+13.0	+11.7	+7.3	+5.9	+5.6	+4.1	+4.2	+5.3	
	1954		+25.7	+17.2	+9.3	+7.0	+6.7	+4.6	+4.6	+5.8	
	1955			+9.2	+1.9	+1.4	+2.4	+0.8	+1.4	+3.2	$\bar{X}$ = 4.20
	1956				-4.9	-2.3	+0.2	-1.2	-0.04	+2.2	$\bar{X}$*= 3.74
	1957					+0.4	+2.9	+0.03	+1.2	+3.7	
	1958						+5.6	-0.1	+1.5	+4.6	
	1959							-5.5	-0.5	+4.2	
	1960								+4.8	+9.4	
	1961									+14.3	

APPENDIX I (Cont'd)

Utah Growth Rates

Category	Year From \ Year to 1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	Averages
VII. Transportation, Communications & Utilities	1952 +1.7	-1.3	-0.1	-0.1	+0.1	-0.5	-0.4	-0.5	-0.5	-0.5	
	1953	-4.3	-1.0	-0.7	-0.3	-0.9	-0.7	-0.8	-0.8	-0.7	
	1954		+2.5	+1.1	+1.0	-0.1	+0.01	-0.2	-0.3	-0.3	$\bar{X}$ = -0.53
	1955			-0.2	+0.3	-0.9	-0.6	-0.7	-0.7	-0.6	$\bar{X}^*$ = -0.57
	1956				+0.9	-1.3	-0.7	-0.8	-0.8	-0.7	
	1957					-3.4	-1.5	-1.4	-1.3	-1.0	
	1958						+0.4	-0.3	-0.5	-0.4	
	1959							-1.1	-1.0	-0.7	
	1960								-1.0	-0.5	
	1961									-0.05	
VIII. Wholesale & Retail Trade	1952 +3.7	+1.5	+2.3	+3.0	+2.8	+2.4	+2.9	+3.0	+2.9	+3.1	
	1953	-0.6	+1.6	+2.7	+2.6	+2.2	+2.8	+2.9	+2.8	+3.0	
	1954		+3.8	+4.4	+3.7	+2.9	+3.5	+3.5	+3.3	+3.4	$\bar{X}$ = 3.05
	1955			+5.2	+3.7	+2.6	+3.4	+3.5	+3.2	+3.4	$\bar{X}^*$ = 3.07
	1956				+2.3	+1.3	+2.8	+3.1	+2.8	+3.1	
	1957					+0.3	+3.0	+3.3	+2.9	+3.3	
	1958						+5.8	+4.9	+3.8	+4.0	
	1959							+3.9	+2.9	+3.4	
	1960								+1.6	+3.2	
	1961									+4.7	
IX. Finance, Insurance, & Real Estate	1952 +7.4	+7.2	+8.6	+7.3	+6.3	+5.9	+6.0	+5.8	+5.4	+5.3	
	1953	+7.1	+9.2	+7.2	+6.0	+5.6	+5.8	+5.6	+5.2	+5.1	
	1954		+11.4	+7.3	+5.6	+5.3	+5.5	+5.4	+5.0	+4.8	$\bar{X}$ = 5.20
	1955			+3.4	+2.8	+3.3	+4.1	+4.2	+3.9	+4.0	$\bar{X}^*$ = 5.09
	1956				+2.3	+3.3	+4.3	+4.4	+4.0	+4.0	
	1957					+4.3	+5.3	+5.1	+4.4	+4.4	
	1958						+6.4	+5.5	+4.4	+4.4	
	1959							+4.7	+3.5	+3.7	
	1960								+2.3	+3.2	
	1961									+4.2	

APPENDIX I (Cont'd)

Utah Growth Rates

Category	Year From \ Year to 1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	Averages
X. Services	1952 +3.5	+3.0	+4.1	+4.3	+4.6	+4.5	+5.1	+5.0	+5.0	+5.1	
	1953	+2.5	+4.4	+4.6	+4.8	+4.7	+5.3	+5.2	+5.2	+5.2	
	1954		+6.4	+5.6	+5.6	+5.2	+5.9	+5.7	+5.6	+5.6	$\bar{X}$ = 5.22
	1955			+4.8	+5.2	+4.8	+5.8	+5.6	+5.4	+5.5	$\bar{X}$*= 5.21
	1956				+5.5	+4.8	+6.1	+5.8	+5.6	+5.6	
	1957					+4.1	+6.4	+5.8	+5.6	+5.6	
	1958						+8.7	+6.7	+6.1	+5.9	
	1959							+4.8	+4.8	+5.0	
	1960								+4.8	+5.2	
	1961									+5.6	
Services LESS Educational Services	1952 +3.2	+2.6	+3.8	+3.9	+4.1	+3.9	+4.5	+4.5	+4.5	+4.6	
	1953	+2.2	+4.1	+4.2	+4.3	+4.0	+4.7	+4.7	+4.7	+4.8	
	1954		+6.0	+5.1	+5.0	+4.5	+5.2	+5.1	+5.0	+5.1	
	1955			+4.4	+4.5	+4.0	+5.0	+5.0	+4.9	+5.0	$\bar{X}$ = 4.73
	1956				+4.6	+3.8	+5.2	+5.1	+5.0	+5.1	$\bar{X}$* = 4.75
	1957					+3.1	+5.5	+5.3	+5.1	+5.2	
	1958						+8.0	+6.4	+5.8	+5.8	
	1959							+4.8	+4.5	+5.0	
	1960								+4.6	+5.2	
	1961									+5.7	
TOTAL - ALL CATEGORIES	1952 +1.4	-0.7	+1.3	+1.9	+1.9	+1.6	+1.9	+2.1	+2.2	+2.5	
	1953	-2.8	+1.2	+2.0	+2.0	+1.5	+2.0	+2.2	+2.3	+2.6	
	1954		+5.3	+4.5	+3.6	+2.7	+3.0	+3.1	+3.0	+3.2	
	1955			+3.6	+2.8	+1.8	+2.4	+2.6	+2.7	+3.0	$\bar{X}$ = 2.48
	1956				+1.9	+1.0	+1.9	+2.4	+2.5	+2.9	$\bar{X}$*= 2.53
	1957					-0.03	+2.0	+2.6	+2.6	+3.1	
	1958						+4.0	+3.7	+3.5	+3.8	
	1959							+3.8	+3.2	+3.8	
	1960								+2.7	+3.8	
	1961									+4.9	

$\bar{X}$ = Mean of all growth rates for the category.

$\bar{X}$*= Mean of growth rates adjusted to eliminate extreme variations.

APPENDIX I

United States Growth Rates

Category	Year From \ Year to 1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	Averages
I. Agriculture	1952 -3.5	-2.2	-0.4	-0.8	-1.7	-2.5	-2.1	-2.1	-2.4	-2.7	
	1953	-0.4	+1.2	+0.1	-1.3	-2.3	-1.8	-1.9	-2.3	-2.6	
	1954		+3.4	+0.6	-1.4	-2.6	-2.0	-2.1	-2.4	-2.8	$\bar{X}$ = -2.53
	1955			-2.2	-3.8	-4.5	-3.4	-3.2	-3.4	-3.6	
	1956				-5.3	-5.7	-3.7	-3.4	-3.6	-3.9	$\bar{X}^*$ = -2.67
	1957					-6.1	-2.9	-2.8	-3.2	-3.6	
	1958						+0.3	-1.0	-2.2	-2.9	
	1959							-2.4	-3.5	-4.0	
	1960								-4.5	-4.8	
	1961									-5.0	
II. Mining & Mineral Production	1952 -3.6	-6.2	-4.1	-2.2	-1.6	-2.9	-2.9	-2.9	-3.3	-3.2	
	1953	-8.7	-4.4	-1.7	-1.1	-2.8	-2.8	-1.2	-3.2	-3.2	
	1954		+0.1	+1.9	+1.5	-1.3	-1.6	-1.8	-2.4	-2.5	$\bar{X}$ = -2.93
	1955			+3.8	+2.3	-1.8	-2.0	-2.2	-2.8	-2.8	$\bar{X}^*$ = -2.93
	1956				+0.7	-4.4	-3.8	-3.6	-4.1	-3.9	
	1957					-9.3	-6.0	-5.0	-5.3	-4.8	
	1958						-2.7	-2.8	-3.9	-3.7	
	1959							-3.0	-4.5	-4.0	
	1960								-6.0	-4.5	
	1961									-2.9	
III. Manufacturing	1952 +4.7	-1.3	+0.4	+0.8	+0.4	-1.0	-0.2	-0.1	-0.4	-0.1	
	1953	-7.0	-1.7	-0.5	-0.6	-2.1	-1.0	-0.8	-1.1	-0.7	
	1954		+4.0	+2.9	+1.6	-1.4	+0.2	+0.3	-0.2	+0.2	$\bar{X}$ = -0.56
	1955			+1.8	+0.5	-0.4	-0.7	-0.4	-0.9	-0.4	
	1956				-8.0	-4.5	-1.5	-0.9	-1.4	-0.7	$\bar{X}^*$ = -0.42
	1957					-8.0	-1.9	-1.0	-1.5	-0.7	
	1958						+4.6	+2.8	+0.7	+1.2	
	1959							+1.0	-1.2	+0.1	
	1960								-3.2	-0.3	
	1961									+2.7	

APPENDIX I (Cont'd)

United States Growth Rates

Category	Year From \ Year to 1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	Averages
IV. Defense	1952 +5.5	-1.8	-2.0	-0.5	-0.1	+0.2	+0.4	-0.1	-0.04	+0.4	
	1953	-8.7	-5.5	-2.4	-1.4	-0.9	-0.4	-0.9	-0.7	-0.2	
	1954		-2.2	+0.9	+1.2	+1.2	+1.3	+0.4	+0.5	+1.0	$\bar{X}$ = 0.19
	1955			+4.1	+2.0	+0.8	+2.2	+1.0	+0.9	+1.4	$\bar{X}^*$ = 0.30
	1956				+1.7	+1.4	+1.6	+0.2	+0.3	+1.0	
	1957					+1.2	+1.4	-0.3	-0.03	+0.8	
	1958						+1.8	-1.0	-0.4	+0.7	
	1959							-3.8	-1.6	+0.4	
	1960								+0.7	+2.5	
	1961									+4.3	
V. Government	1952 +1.9	+2.9	+2.9	+3.6	+4.1	+4.2	+4.2	+4.3	+4.3	+4.3	
	1953	+3.8	+3.3	+4.2	+4.7	+4.7	+4.6	+4.6	+4.6	+4.5	
	1954		+2.8	+4.4	+6.0	+4.9	+4.8	+4.8	+4.7	+4.6	$\bar{X}$ = 4.52
	1955			+6.1	+6.0	+5.6	+5.3	+5.2	+5.0	+4.9	
	1956				+6.0	+5.4	+5.0	+5.0	+4.8	+4.7	$\bar{X}^*$ = 4.59
	1957					+4.7	+4.5	+4.6	+4.5	+4.4	
	1958						+4.2	+4.6	+4.4	+4.4	
	1959							+4.9	+4.5	+4.4	
	1960								+5.4	+4.2	
	1961									+4.3	
VI. Construction	1952 -0.4	-0.4	+2.1	+3.3	+2.1	+0.9	+1.7	+1.1	+0.5	+0.2	
	1953	-0.5	+3.3	+4.6	+2.7	+1.2	+2.0	+1.4	+0.6	+0.3	
	1954		+7.3	+7.2	+3.8	+1.6	+2.5	+1.7	+0.8	+0.4	$\bar{X}$ = 0.57
	1955			+7.0	+2.1	-0.3	+1.3	+0.6	-0.3	-0.6	
	1956				-2.5	-3.7	-0.5	-1.0	-1.7	-1.8	$\bar{X}^*$ = 0.48
	1957					-5.0	+0.5	-0.5	-1.4	-1.6	
	1958						+6.4	+1.8	-0.2	-0.8	
	1959							-2.5	-3.4	-3.0	
	1960								-4.2	-3.3	
	1961									-2.3	

APPENDIX I (Cont'd)

United States Growth Rates

Category	Year From \ Year to 1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	Averages
VII. Transportation, Communication & Utilities	1952 +1.0	-2.0	-0.8	-0.02	-0.03	-1.1	-0.8	-0.7	-0.9	-0.8	
	1953	-4.8	-1.8	-0.4	-0.3	-1.5	-1.1	-0.9	-1.1	-1.0	
	1954		+1.4	+1.9	+1.3	-0.7	-0.4	-0.3	-0.6	-0.5	$\bar{X}$ = -0.83
	1955			+2.5	+1.2	-1.3	-0.8	-0.6	-0.9	-0.8	
	1956				-0.1	-3.2	-1.9	-1.4	-1.6	-1.3	$\bar{X}^*$ = -0.78
	1957					-6.3	-2.8	-1.8	-1.9	-1.5	
	1958						+0.9	+0.5	-0.4	-0.3	
	1959							+0.2	-1.1	-0.7	
	1960								-2.3	-1.2	
	1961									+0.05	
VIII. Wholesale & Retail Trade	1952 +2.4	+1.1	+1.7	+2.1	+1.7	+1.2	+1.5	+1.7	+1.4	+1.5	
	1953	-0.1	+1.4	+1.9	+1.5	+1.0	+1.4	+1.6	+1.3	+1.4	$\bar{X}$ = 1.45
	1954		+2.9	+3.0	+2.1	+1.2	+1.7	+1.8	+1.5	+1.5	
	1955			+3.1	+1.7	+0.7	+1.4	+1.6	+1.3	+1.3	$\bar{X}^*$ = 1.47
	1956				+0.3	-0.5	+0.8	+1.3	+0.9	+1.1	
	1957					-1.1	+1.1	+1.6	+1.1	+1.3	
	1958						+3.5	+3.0	+1.9	+1.9	
	1959							+2.6	+1.1	+1.3	
	1960								-0.4	+0.7	
	1961									+1.8	
IX. Finance, Insurance & Real Estate	1952 +3.7	+3.9	+4.1	+4.1	+3.7	+3.3	+3.1	+3.1	+3.0	+2.8	
	1953	+4.1	+4.3	+4.2	+3.7	+3.3	+3.2	+3.2	+3.1	+3.0	$\bar{X}$ = 3.03
	1954		+4.5	+4.3	+3.5	+3.0	+3.1	+3.1	+3.0	+2.8	
	1955			+4.0	+3.0	+2.6	+2.7	+2.8	+2.8	+2.6	$\bar{X}^*$ = 3.03
	1956				+2.0	+1.8	+2.2	+2.5	+2.5	+2.4	
	1957					+1.7	+2.4	+2.7	+2.6	+2.4	
	1958						+3.1	+3.2	+2.9	+2.6	
	1959							+3.4	+2.9	+2.5	
	1960								+2.4	+2.0	
	1961									+1.6	

APPENDIX I (Cont'd)

United States Growth Rates

Category	Year From \ Year to 1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	Averages
X. Services	1952 +2.4	+2.3	+3.1	+3.3	+3.3	+2.9	+3.1	+3.2	+3.1	+3.1	
	1953	+2.3	+3.4	+3.7	+3.6	+3.0	+3.2	+3.3	+3.1	+3.2	
	1954		+4.5	+4.4	+4.0	+3.2	+3.4	+3.5	+3.3	+3.3	$\bar{X}$ = 3.14
	1955			+4.2	+3.7	+2.8	+3.2	+3.2	+3.1	+3.1	$\bar{X}^*$ = 3.18
	1956				+3.3	+2.1	+2.8	+3.0	+2.8	+2.9	
	1957					+0.9	+2.6	+2.9	+2.7	+2.8	
	1958						+4.3	+4.0	+3.3	+3.3	
	1959							+3.6	+2.8	+3.0	
	1960								+2.1	+2.7	
	1961									+3.2	
TOTAL - ALL CATEGORIES	1952 +2.1	-0.1	+1.1	+1.5	+1.2	+0.5	+0.9	+1.0	+0.8	+0.8	
	1953	-2.2	+0.5	+1.3	+1.0	+0.2	+0.7	+0.8	+0.6	+0.7	$\bar{X}$ = 0.82
	1954		+3.4	+3.1	+2.1	+0.8	+1.3	+1.3	+1.0	+1.1	
	1955			+2.8	+1.5	-0.1	+0.8	+0.9	+0.6	+0.8	$\bar{X}^*$ = 0.86
	1956				+0.2	-1.5	+0.1	+0.5	+0.2	+0.4	
	1957					-3.1	+0.1	+0.6	+0.2	+0.5	
	1958						+3.4	+2.4	+1.3	+1.4	
	1959							+1.4	+0.3	+0.7	
	1960								-0.9	+0.4	
	1961									+1.6	

$\bar{X}$ = Mean of all growth rates for the category.
$\bar{X}$ = Mean of growth rates adjusted to eliminate extreme variations.

APPENDIX II

BASIC DATA FOR COMPUTATION OF DIVERSIFICATION INDEXES PROVO METROPOLITAN AREA, UTAH AND UNITED STATES

Actual 1952 to 1962; Projected 1965 to 1980

	Category	Per Cent of Total	Cumulative
	Provo Metropolitan Area		
	1952		
III.	Manufacturing	31.3	31.3
VIII.	Wholesale & Retail Trade	17.4	48.7
I.	Agriculture	13.5	62.2
V.	Government	12.9	75.1
X.	Services	10.9	86.0
VII.	Transportation, Communication & Utilities	6.2	92.2
VI.	Construction	5.7	97.9
IX.	Finance, Insurance & Real Estate	1.7	99.6
II.	Mining & Mineral Production	0.5	100.1
IV.	Defense	--	100.1
			793.2
	DI = 54.04		
	1953		
III.	Manufacturing	33.5	33.5
VIII.	Wholesale & Retail Trade	16.6	50.1
V.	Government	12.9	63.0
I.	Agriculture	12.4	75.4
X.	Services	11.1	86.5
VII.	Transportation, Communication & Utilities	6.2	92.7
VI.	Construction	5.3	98.0
IX.	Finance, Insurance & Real Estate	1.6	99.6
II.	Mining & Mineral Production	0.5	100.1
IV.	Defense	--	100.1
			799.0
	DI = 55.33		
	1954		
III.	Manufacturing	31.3	31.3
VIII.	Wholesale & Retail Trade	16.7	48.0
V.	Government	14.0	62.0
X.	Services	12.9	74.9
I.	Agriculture	12.0	86.9
VII.	Transportation, Communication & Utilities	6.0	92.9
VI.	Construction	4.8	97.7
IX.	Finance, Insurance & Real Estate	1.8	99.5
II.	Mining & Mineral Production	0.5	100.0
IV.	Defense	--	100.0
			793.2
	DI = 54.04		
	1955		
III.	Manufacturing	33.0	33.0
VIII.	Wholesale & Retail Trade	15.8	48.8
V.	Government	13.3	62.1
X.	Services	12.8	74.9
I.	Agriculture	11.0	85.9
VII.	Transportation, Communication & Utilities	5.9	91.8
VI.	Construction	5.6	97.4
IX.	Finance, Insurance & Real Estate	2.1	99.5
II.	Mining & Mineral Production	0.5	100.0
IV.	Defense	--	100.0
			793.4
	DI = 54.09		

APPENDIX II (Cont'd)

Provo Metropolitan Area (cont'd)

	Category	Per Cent of Total	Cumulative
	1956		
III.	Manufacturing	32.6	32.6
VIII.	Wholesale & Retail Trade	15.9	48.5
V.	Government	13.4	61.9
X.	Services	13.1	75.0
I.	Agriculture	10.4	85.4
VI.	Construction	7.0	92.4
VII.	Transportation, Communication & Utilities	4.9	97.3
IX.	Finance, Insurance & Real Estate	2.1	99.4
II.	Mining & Mineral Production	0.5	99.9
IV.	Defense	0.0	99.9
			792.3
	DI = 53.84		
	1957		
III.	Manufacturing	32.3	32.3
VIII.	Wholesale & Retail Trade	16.3	48.6
X.	Services	14.8	63.4
V.	Government	13.7	77.1
I.	Agriculture	9.2	86.3
VI.	Construction	6.6	92.9
VII.	Transportation, Communication & Utilities	4.6	97.5
IX.	Finance, Insurance & Real Estate	2.0	99.5
II.	Mining & Mineral Production	0.5	100.0
IV.	Defense	0.0	100.0
			797.6
	DI = 55.02		
	1958		
III.	Manufacturing	29.4	29.4
VIII.	Wholesale & Retail Trade	17.1	46.5
X.	Services	16.5	63.0
V.	Government	15.0	78.0
I.	Agriculture	9.6	87.6
VII.	Transportation, Communication & Utilities	5.0	92.6
VI.	Construction	4.7	97.3
IX.	Finance, Insurance & Real Estate	2.2	99.5
II.	Mining & Mineral Production	0.5	100.0
IV.	Defense	0.0	100.0
			793.9
	DI = 54.20		
	1959		
III.	Manufacturing	26.8	26.8
X.	Services	18.6	45.4
VIII.	Wholesale & Retail Trade	17.8	63.2
V.	Government	15.0	78.2
I.	Agriculture	9.3	87.5
VI.	Construction	5.0	92.5
VII.	Transportation, Communication & Utilities	4.8	97.3
IX.	Finance, Insurance & Real Estate	2.3	99.6
II.	Mining & Mineral Production	0.4	100.0
IV.	Defense	--	100.0
			790.5
	DI = 53.44		

APPENDIX II(Cont'd)

	Category	Per Cent of Total	Cumulative
	Provo Metropolitan Area		
	1960		
III.	Manufacturing	27.7	27.7
X.	Services	18.8	46.5
VIII.	Wholesale & Retail Trade	16.9	63.4
V.	Government	15.8	79.2
I.	Agriculture	8.4	87.6
VI.	Construction	5.3	92.9
VII.	Transportation, Communication & Utilities	4.4	97.3
IX.	Finance, Insurance & Real Estate	2.2	99.5
II.	Mining & Mineral Production	0.4	99.9
IV.	Defense	0.0	99.9
			793.9
	DI = 54.20		
	1961		
III.	Manufacturing	27.2	27.2
X.	Services	20.0	47.2
VIII.	Wholesale & Retail Trade	16.8	64.0
V.	Government	16.5	80.5
I.	Agriculture	8.1	88.6
VI.	Construction	4.6	93.2
VII.	Transportation, Communication & Utilities	4.2	97.4
IX.	Finance, Insurance & Real Estate	2.1	99.5
II.	Mining & Mineral Production	0.6	100.1
IV.	Defense	0.0	100.1
			797.8
	DI = 55.07		

	Category	Per Cent of Total	Cumulative
	Provo Metropolitan Area (cont'd)		
	1962		
III.	Manufacturing	25.1	25.1
X.	Services	20.8	45.9
VIII.	Wholesale & Retail Trade	16.8	62.7
V.	Government	16.6	79.3
I.	Agriculture	8.2	87.5
VI.	Construction	5.7	93.2
VII.	Transportation, Communication & Utilities	4.1	97.3
IX.	Finance, Insurance & Real Estate	2.2	99.5
II.	Mining & Mineral Production	0.5	100.0
IV.	Defense	0.0	100.0
			790.5
	DI = 53.44		

APPENDIX II (Cont'd)

Provo Metropolitan Area (cont'd)

	Category	Per Cent of Total	Cumulative
	1965		
III.	Manufacturing	23.6	23.6
X.	Services	23.4	47.0
V.	Government	17.9	64.9
VIII.	Wholesale & Retail Trade	16.4	81.3
I.	Agriculture	7.0	88.3
VI.	Construction	5.1	93.4
VII.	Transportation, Communication & Utilities	3.8	97.2
IX.	Finance, Insurance & Real Estate	2.3	99.5
II.	Mining & Mineral Production	0.5	100.0
IV.	Defense	0.0	100.0
			795.2
	DI = 54.49		
	1970		
X.	Services	26.1	26.1
III.	Manufacturing	21.4	47.5
V.	Government	19.7	67.2
VIII.	Wholesale & Retail Trade	16.0	83.2
I.	Agriculture	5.5	88.7
VI.	Construction	4.9	93.6
VII.	Transportation, Communication & Utilities	3.4	97.0
IX.	Finance, Insurance & Real Estate	2.6	99.6
II.	Mining & Mineral Production	0.4	100.0
IV.	Defense	0.0	100.0
			802.9
	DI = 56.20		
	1975		
X.	Services	28.7	28.7
V.	Government	21.1	49.8
III.	Manufacturing	19.4	69.2
VIII.	Wholesale & Retail Trade	15.6	84.8
VI.	Construction	4.8	89.6
I.	Agriculture	4.0	93.6
VII.	Transportation, Communication & Utilities	3.0	96.6
IX.	Finance, Insurance & Real Estate	3.0	99.6
II.	Mining & Mineral Production	0.4	100.0
IV.	Defense	0.0	100.0
			811.9
	DI = 58.20		
	1980		
X.	Services	29.1	29.1
V.	Government	22.8	51.9
III.	Manufacturing	18.0	69.9
VIII.	Wholesale & Retail Trade	15.6	85.5
VI.	Construction	4.8	90.3
IX.	Finance, Insurance & Real Estate	3.5	93.8
I.	Agriculture	3.2	97.0
VII.	Transportation, Communication & Utilities	2.7	99.7
II.	Mining & Mineral Production	0.3	100.0
IV.	Defense	0.0	100.0
			817.2
	DI = 59.38		

APPENDIX II (Cont'd)

Utah

	Category	Per Cent of Total	Cumulative
	1952		
VIII.	Wholesale & Retail Trade	19.5	19.5
III.	Manufacturing	13.3	32.8
V.	Government	12.2	45.0
IV.	Defense	12.0	57.0
I.	Agriculture	10.9	67.9
VII.	Transportation, Communication & Utilities	9.6	77.5
X.	Services	8.9	86.4
II.	Mining & Mineral Production	5.6	92.0
VI.	Construction	4.9	96.9
IX.	Finance, Insurance & Real Estate	3.0	99.9
			674.9
	DI = 27.76		
	1953		
VIII.	Wholesale & Retail Trade	20.0	20.0
III.	Manufacturing	13.8	33.8
V.	Government	13.8	47.6
I.	Agriculture	11.0	58.6
VII.	Transportation, Communication, & Utilities	9.6	68.2
IV.	Defense	9.3	77.5
X.	Services	9.1	86.6
II.	Mining & Mineral Production	5.6	92.2
VI.	Construction	4.6	96.8
IX.	Finance, Insurance & Real Estate	3.2	100.0
			681.3
	DI = 29.18		
	1954		
VIII.	Wholesale & Retail Trade	20.4	20.4
V.	Government	14.1	34.5
III.	Manufacturing	13.7	48.2
I.	Agriculture	10.7	58.9
X.	Services	9.6	68.5
VII.	Transportation, Communication & Utilities	9.4	77.9
IV.	Defense	8.3	86.2
II.	Mining & Mineral Production	5.5	91.7
VI.	Construction	4.8	96.5
IX.	Finance, Insurance & Real Estate	3.5	100.0
			682.8
	DI = 29.51		
	1955		
VIII.	Wholesale & Retail Trade	20.1	20.1
III.	Manufacturing	14.0	34.1
V.	Government	13.5	47.6
I.	Agriculture	10.4	58.0
X.	Services	9.7	67.7
VII.	Transportation, Communication & Utilities	9.2	76.9
IV.	Defense	8.0	84.9
II.	Mining & Mineral Production	5.7	90.6
VI.	Construction	5.7	96.3
IX.	Finance, Insurance & Real Estate	3.7	100.0
			676.2
	DI = 28.04		

APPENDIX II (Cont'd)

Utah (cont'd)

	Category	Per Cent of Total	Cumulative
	1956		
VIII.	Wholesale & Retail Trade	20.4	20.4
III.	Manufacturing	14.4	34.8
V.	Government	13.6	48.4
X.	Services	9.8	58.2
I.	Agriculture	9.6	67.8
VII.	Transportation, Communication & Utilities	8.8	76.6
IV.	Defense	7.6	84.2
II.	Mining & Mineral Production	6.1	90.3
VI.	Construction	6.0	96.3
IX.	Finance, Insurance & Real Estate	3.7	100.0
			677.0
	DI = 28.22		
	1957		
VIII.	Wholesale & Retail Trade	20.4	20.4
III.	Manufacturing	14.5	34.9
V.	Government	14.3	49.2
X.	Services	10.1	59.3
I.	Agriculture	9.0	68.3
VII.	Transportation, Communication & Utilities	8.7	77.0
IV.	Defense	7.5	84.5
II.	Mining & Mineral Production	6.2	90.7
VI.	Construction	5.6	96.3
IX.	Finance, Insurance & Real Estate	3.7	100.0
			680.6
	DI = 29.02		
	1958		
VIII.	Wholesale & Retail Trade	20.5	20.5
V.	Government	15.1	35.6
III.	Manufacturing	13.6	49.2
X.	Services	10.6	59.8
I.	Agriculture	8.9	68.7
VII.	Transportation, Communication & Utilities	8.4	77.1
IV.	Defense	8.1	85.2
VI.	Construction	5.6	90.8
II.	Mining & Mineral Production	5.4	96.2
IX.	Finance, Insurance & Real Estate	3.8	100.0
			683.1
	DI = 29.58		
	1959		
VIII.	Wholesale & Retail Trade	20.9	20.9
V.	Government	15.3	36.2
III.	Manufacturing	12.9	49.1
X.	Services	11.0	60.1
IV.	Defense	9.2	69.3
I.	Agriculture	8.3	77.6
VII.	Transportation, Communication & Utilities	8.2	85.8
VI.	Construction	5.7	91.5
II.	Mining & Mineral Production	4.6	96.1
IX.	Finance, Insurance & Real Estate	3.9	100.0
			686.6
	DI = 30.36		

APPENDIX II(Cont'd)

Utah (cont'd)

	Category	Per Cent of Total	Cumulative
	1960		
VIII.	Wholesale & Retail Trade	20.9	20.9
V.	Government	15.5	36.4
III.	Manufacturing	13.2	49.6
X.	Services	11.0	60.6
IV.	Defense	9.7	70.3
VII.	Transportation, Communication & Utilities	7.8	78.1
I.	Agriculture	7.8	85.9
VI.	Construction	5.2	91.1
II.	Mining & Mineral Production	4.9	96.0
IX.	Finance, Insurance & Real Estate	4.0	100.0
			688.9
	DI = 30.87		
	1961		
VIII.	Wholesale & Retail Trade	20.7	20.7
V.	Government	16.1	36.8
III.	Manufacturing	12.9	49.7
X.	Services	11.4	61.1
IV.	Defense	10.3	71.4
VII.	Transportation, Communication & Utilities	7.5	78.9
I.	Agriculture	7.2	86.1
VI.	Construction	5.3	91.4
II.	Mining & Mineral Production	4.7	96.1
IX.	Finance, Insurance & Real Estate	3.9	100.0
			692.2
	DI = 31.60		

Utah (cont'd)

	Category	Per Cent of Total	Cumulative
	1962		
VIII.	Wholesale & Retail Trade	20.6	20.6
V.	Government	16.1	36.7
III.	Manufacturing	12.6	49.3
X.	Services	11.4	60.7
IV.	Defense	11.1	71.8
VII.	Transportation, Communication & Utilities	7.1	78.9
I.	Agriculture	7.0	85.9
VI.	Construction	5.8	91.7
II.	Mining & Mineral Production	4.3	96.0
IX.	Finance, Insurance & Real Estate	3.9	99.9
			691.5
	DI = 31.44		

APPENDIX II (Cont'd)

Utah (cont'd)

	Category	Per Cent of Total	Cumulative
	1965		
VIII.	Wholesale & Retail Trade	21.0	21.0
V.	Government	17.0	38.0
III.	Manufacturing	12.6	50.6
X.	Services	12.1	62.7
IV.	Defense	10.3	73.0
VII.	Transportation, Communication & Utilities	6.8	79.8
I.	Agriculture	6.2	86.0
VI.	Construction	5.5	91.5
IX.	Finance, Insurance & Real Estate	4.3	95.8
II.	Mining & Mineral Production	4.2	100.0
			698.4
	DI = 33.00		
	1970		
VIII.	Wholesale & Retail Trade	21.1	21.1
V.	Government	18.4	39.5
X.	Services	13.0	52.5
IV.	Defense	12.0	64.5
III.	Manufacturing	11.2	75.7
VII.	Transportation, Communication & Utilities	5.9	81.6
VI.	Construction	5.2	86.8
I.	Agriculture	5.0	91.8
IX.	Finance, Insurance & Real Estate	4.6	96.4
II.	Mining & Mineral Production	3.6	100.0
			709.9
	DI = 35.52		
	1975		
VIII.	Wholesale & Retail Trade	21.5	21.5
V.	Government	20.1	41.6
X.	Services	14.3	55.9
III.	Manufacturing	11.7	67.6
IV.	Defense	9.8	77.4
VII.	Transportation, Communication & Utilities	5.2	82.6
VI.	Construction	5.1	87.7
IX.	Finance, Insurance & Real Estate	5.0	92.7
I.	Agriculture	4.2	96.9
II.	Mining & Mineral Production	3.2	100.1
			724.0
	DI = 38.67		
	1980		
V.	Government	21.9	21.9
VIII.	Wholesale & Retail Trade	21.7	43.6
X.	Services	15.5	59.1
III.	Manufacturing	11.2	70.3
IV.	Defense	8.6	78.9
IX.	Finance, Insurance & Real Estate	5.3	84.2
VI.	Construction	4.9	89.1
VII.	Transportation, Communication & Utilities	4.5	93.6
I.	Agriculture	3.6	97.2
II.	Mining & Mineral Production	2.8	100.0
			737.9
	DI = 41.78		

APPENDIX II(Cont'd)

United States

	Category	Per Cent of Total	Cumulative
	1952		
III.	Manufacturing	28.4	28.4
VIII.	Wholesale & Retail Trade	18.0	46.4
I.	Agriculture	12.2	58.6
X.	Services	10.3	68.9
V.	Government	9.7	78.6
VII.	Transportation, Communication & Utilities	7.6	86.2
VI.	Construction	4.7	90.9
IX.	Finance, Insurance & Real Estate	3.7	94.6
IV.	Defense	3.7	98.3
II.	Mining & Mineral Production	1.6	99.9
			750.8
	DI = 44.62		
	1953		
III.	Manufacturing	29.1	29.1
VIII.	Wholesale & Retail Trade	18.0	47.1
I.	Agriculture	11.5	58.6
X.	Services	10.3	68.9
V.	Government	9.7	78.6
VII.	Transportation, Communication & Utilities	7.6	86.2
VI.	Construction	4.6	90.8
IX.	Finance, Insurance & Real Estate	3.8	94.6
IV.	Defense	3.8	98.4
II.	Mining & Mineral Production	1.5	99.9
			752.2
	DI = 44.93		
	1954		
III.	Manufacturing	27.7	27.7
VIII.	Wholesale & Retail Trade	18.4	46.1
I.	Agriculture	11.7	57.8
X.	Services	10.8	68.6
V.	Government	10.3	78.9
VII.	Transportation, Communication & Utilities	7.4	86.3
VI.	Construction	4.7	91.0
IX.	Finance, Insurance & Real Estate	4.0	95.0
IV.	Defense	3.6	98.6
II.	Mining & Mineral Production	1.4	100.0
			750.0
	DI = 44.44		
	1955		
III.	Manufacturing	27.8	27.8
VIII.	Wholesale & Retail Trade	18.4	46.2
I.	Agriculture	11.7	57.9
X.	Services	10.9	68.8
V.	Government	10.3	79.1
VII.	Transportation, Communication & Utilities	7.2	86.3
VI.	Construction	4.9	91.2
IX.	Finance, Insurance & Real Estate	4.1	95.3
IV.	Defense	3.4	98.7
II.	Mining & Mineral Production	1.4	100.1
			751.4
	DI = 44.76		

APPENDIX II (Cont'd)

United States (cont'd)

	Category	Per Cent of Total	Cumulative
	1956		
III.	Manufacturing	27.6	27.6
VIII.	Wholesale & Retail Trade	18.4	46.0
I.	Agriculture	11.1	57.1
X.	Services	11.1	68.2
V.	Government	10.6	78.8
VII.	Transportation, Communication & Repairs	7.2	86.0
VI.	Construction	5.1	91.1
IX.	Finance, Insurance & Real Estate	4.1	95.2
IV.	Defense	3.4	98.6
II.	Mining & Mineral Production	1.4	100.0
			748.6
	DI = 44.13		
	1957		
III.	Manufacturing	27.3	27.3
VIII.	Wholesale & Retail Trade	18.4	45.7
X.	Services	11.4	57.1
V.	Government	11.2	68.3
I.	Agriculture	10.5	78.8
VII.	Transportation, Communication & Repairs	7.2	86.0
VI.	Construction	4.9	90.9
IX.	Finance, Insurance & Real Estate	4.2	95.1
IV.	Defense	3.5	98.6
II.	Mining & Mineral Production	1.4	100.0
			747.8
	DI = 43.96		
	1958		
III.	Manufacturing	25.9	25.9
VIII.	Wholesale & Retail Trade	18.8	44.7
V.	Government	12.1	56.8
X.	Services	11.9	68.7
I.	Agriculture	10.2	78.9
VII.	Transportation, Communication & Repairs	6.9	85.8
VI.	Construction	4.9	90.7
IX.	Finance, Insurance & Real Estate	4.4	95.1
IV.	Defense	3.6	98.7
II.	Mining & Mineral Production	1.3	100.0
			745.3
	DI = 43.40		
	1959		
III.	Manufacturing	26.2	26.2
VIII.	Wholesale & Retail Trade	18.8	45.0
V.	Government	12.2	57.2
X.	Services	12.0	69.2
I.	Agriculture	9.9	79.1
VII.	Transportation, Communication & Repairs	6.8	85.9
VI.	Construction	5.0	90.9
IX.	Finance, Insurance & Real Estate	4.4	95.3
IV.	Defense	3.6	98.9
II.	Mining & Mineral Production	1.2	100.1
			747.8
	DI = 43.96		

APPENDIX II (Cont'd)

United States (cont'd)

	Category	Per Cent of Total	Cumulative
	1960		
III.	Manufacturing	26.1	26.1
VIII.	Wholesale & Retail Trade	19.0	45.1
V.	Government	12.6	57.7
X.	Services	12.3	70.0
I.	Agriculture	9.6	79.6
VII.	Transportation, Communication & Utilities	6.7	86.3
VI.	Construction	4.8	91.1
IX.	Finance, Insurance & Real Estate	4.5	95.6
IV.	Defense	3.4	99.0
II.	Mining & Mineral Production	1.2	100.2
			750.7
	DI = 44.60		

	Category	Per Cent of Total	Cumulative
	1961		
III.	Manufacturing	25.5	25.5
VIII.	Wholesale & Retail Trade	19.1	44.6
V.	Government	13.2	57.8
X.	Services	12.6	70.4
I.	Agriculture	9.2	79.6
VII.	Transportation, Communication & Utilities	6.6	86.2
VI.	Construction	4.6	90.8
IX.	Finance, Insurance & Real Estate	4.6	95.4
IV.	Defense	3.4	98.8
II.	Mining & Mineral Production	1.1	99.9
			749.0
	DI = 44.22		

United States (cont'd)

	Category	Per Cent of Total	Cumulative
	1962		
III.	Manufacturing	25.8	25.8
VIII.	Wholesale & Retail Trade	19.1	44.9
V.	Government	13.6	58.5
X.	Services	12.8	71.3
I.	Agriculture	8.6	79.9
VII.	Transportation, Communication & Utilities	6.5	86.4
IX.	Finance, Insurance & Real Estate	4.6	91.0
VI.	Construction	4.5	95.5
IV.	Defense	3.5	99.0
II.	Mining & Mineral Production	1.1	100.1
			752.4
	DI = 44.98		

APPENDIX II (Cont'd)

United States (cont'd)

	Category	Per Cent of Total	Cumulative
	1965		
III.	Manufacturing	24.8	24.8
VIII.	Wholesale & Retail Trade	19.3	44.1
V.	Government	14.6	58.7
X.	Services	13.3	72.0
I.	Agriculture	8.1	80.1
VII.	Transportation, Communication & Repairs	6.2	86.3
IX.	Finance, Insurance & Real Estate	4.9	91.2
VI.	Construction	4.5	95.7
IV.	Defense	3.4	99.1
II.	Mining & Mineral Production	1.0	100.1
			752.1
	DI = 44.91		
	1970		
III.	Manufacturing	23.4	23.4
VIII.	Wholesale & Retail Trade	19.7	43.1
V.	Government	16.4	59.5
X.	Services	14.2	73.7
I.	Agriculture	6.9	80.6
VII.	Transportation, Communication & Repairs	5.7	86.3
IX.	Finance, Insurance & Real Estate	5.4	91.7
VI.	Construction	4.4	96.1
IV.	Defense	3.1	99.2
II.	Mining & Mineral Production	0.8	100.0
			753.6
	DI = 45.24		
	1975		
III.	Manufacturing	22.2	22.2
VIII.	Wholesale & Retail Trade	20.1	42.3
V.	Government	17.5	59.8
X.	Services	15.2	75.0
I.	Agriculture	5.9	80.9
IX.	Finance, Insurance & Real Estate	5.9	86.8
VII.	Transportation, Communication & Repairs	5.3	92.1
VI.	Construction	4.4	96.5
IV.	Defense	2.9	99.4
II.	Mining & Mineral Production	0.6	100.0
			755.0
	DI = 45.55		
	1980		
III.	Manufacturing	21.1	21.1
VIII.	Wholesale & Retail Trade	20.5	41.6
V.	Government	17.9	59.5
X.	Services	16.3	75.8
IX.	Finance, Insurance & Real Estate	6.5	82.3
I.	Agriculture	5.1	87.4
VII.	Transportation, Communication & Repairs	4.9	92.3
VI.	Construction	4.4	96.7
IV.	Defense	2.7	99.4
II.	Mining & Mineral Production	0.5	99.9
			756.0
	DI = 45.78		